LIVESTOCK FEED BOARD OF CANADA

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THE NORTH AMERICAN GRAIN AND LIVESTOCK INDUSTRIES

A COMMODITY PROFILE

O V E R V I E W

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OBJECTIVES AND DUTIES

*The **Livestock Feed Board of Canada** is a Crown Corporation reporting to Parliament through the Minister of Agriculture. Established under the Livestock Feed Assistance Act in 1967, its objectives are to ensure: (a) the availability of feed grain in Eastern Canadc and British Columbia, (b) the availability of adequate storage space in Eastern Canada, and (c) the reasonable stability and fair equalization of feed grain prices in Eastern Canada, British Columbia, the Yukon Territory and the Northwest Territories. The Board administers the Feed Freight Equalization Program under which a portion of the costs of transportation of feed grains is paid. The Act also stipulates that it is the duty of the Board to make a continuing study of feed grain requirements and availability in these areas, as well as to study and make recommendations to the Minister with respect to requirements for additional feed grain storage facilities in Eastern Canada. It is also the duty of the Board to advise the Government on all matters pertaining to the stabilization and fair equalization of feed grain prices to livestock feeders, and to the greatest extent possible, consistent with its objectives, to consult and cooperate with all departments, branches or other agencies of the Government of Canada or any Province having duties, aims or objects related to those of the Board.*

PREFACE

The North American agricultural community over the last 25 years has undergone radical changes. This has happened in a period when agriculture's prominence has been eroded as a result of greater concentration of the population in urban centers. As the urban population has increased in both absolute and relative terms, rural interests and concerns have become less recognized, resulting in a further erosion of agriculture's prominence in the affairs of the nation. Each year a rising percentage of the population not only lives in an urban area but was also born in one. Fewer and fewer people have any rural background or experience.

Over the last 25 years agricultural issues have become more and more entangled in global economic and political events. The OPEC induced petroleum price increases was one event affecting all sectors of agriculture, from the producer to the consumer. Another major event was the easy money, low interest policies of the 1970's; which in turn were followed by the tight money, high interest policies of the 1980's. Together, this led to an increasingly debt induced level of economic activity as we left the 1970's and entered the 1980's.

The depressed markets of the 1960's turned into the booming markets of the 1970's. Grain producers who had been forced to market grain as meat in order to make a profit now had a choice, as grain could be produced and sold profitably as grain. As some grain producers took advantage of this fortuitious turn of events, that in turn led to market opportunities for those wishing to enter or expand livestock production. Thus it became a period of expanding opportunities for both grain and livestock producers. Those opportunities were aggressively pursued.

The boom of the 1970's was unsustainable, as is painfully and clearly evident in hindsight. Market conditions in the 1980's are significantly different from those of 1970's. Expansion has been replaced by retrenchment and once again grain producers are having increasing difficulty marketing their grain as grain and still making a profit. The pressures are thus returning to market some grain as meat. But the agricultural landscape of the mid-1980's is significantly different from that at the beginning of the 1970's. It would be wrong to assume that we can head back in time.

As more grain left the grain surplus regions as grain in the 1970's, so also did some of the livestock production base leave the grain belts. In the United States some of

the hog market moved into the South-East and some cattle moved out of Iowa and into Texas. Freed up pastures could then be converted to grain land. In Canada the most dramatic shift was the move from West to East of part of the Canadian hog industry. The same market opportunity that allowed grain-livestock producers to profitably focus on grain also gave other producers an opportunity to profitably produce livestock.

As agricultural output expanded in the various regions, some regions also grew. The North American corn belt moved north and east through much of Ontario and established a solid base in Quebec. Sorghum output also increased, providing excellent local feed supplies to livestock producers south-west of the U.S. Corn Belt. Thus if conditions in the 1980's encourage a return to livestock feeding by grain producers, the geographical grain base of the mid-1980's is significantly different from that of the late 1960's and early 1970's.

The intent of this overview is to review the broad grain and livestock market events of the last 25 years. This review will be in the context of the changing global realities which in turn impacted on the various agricultural sectors. An understanding of the evolution of the various grain and livestock sectors in North America over the past 25 years will help to develop an understanding of the most likely developments to expect in the years ahead. The most important aspect of this overview is that it is an attempt to describe the "forest" of the Canadian and U.S. grain and livestock industries. A knowledge of the "forest" helps to put the "trees" in perspective.

In the period ahead, profiles will be produced on the various sectors of the North American grain and livestock industries. Initially, grains, red meat and poultry will be the sectors to be profiled. Due to the interrelationships of the sectors with the global markets, the global agricultural environment will also be further detailed. Economic theory and the application thereof is of interest mainly to the economics profession, and these issues will largely be addressed outside of the context of the profile. Of higher priority is the addition of dairy and oilseeds to the profile framework.

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I. A MACROECONOMIC VIEW

A. APPLIED ECONOMIC THEORY

1. A Disequilibrium Economy

Prior to the "General Theory of Employment, Interest, and Money," by John Maynard Keynes, the economics profession was essentially microeconomic. This meant that economics only looked at individual markets and not the whole economy. Adam Smith had stated that if each individual attempted to maximize their own self-interest, then an invisible hand would ensure that society's self-interest would be assured. In other words, if each competitive market was in equilibrium, then the economy would be. Macroeconomics, the study of the whole economy simply did not exist.

With Keynes' general theory in the mid-1930's, macroeconomics was born. Rather than the laisser-faire approach recommended by the classical economists (leave it to the invisible hand), Keynes proposed an interventionist approach of government to the economy. Classical economists assumed that the macroeconomy would naturally be in equilibrium while Keynes assumed that the macroeconomy would virtually always be in disequilibrium.

> I shall argue that the postulates of the classical theory are applicable to a special case only and not to the general case, the situation which it assumes being a limiting point of the possible positions of equilibrium. Moreover, the characteristics of the special case assumed by the classical theory happen not to be those of the economic society in which we actually live, with the result that its teaching is misleading and disastrous if we attempt to apply it to the facts of experience.[1]

This is a very important point. As an economy tended to be in disequilibrium, Keynes believed that the proper policies needed to be taken to push the economy back into equilibrium. Failure to do so would result in extended periods of unbalanced markets. Although Keynes' approach was radically new, it remained consistent with classical theory. A market can be in what is called momentary equilibrium, whilst being in a position of short and long term disequilibrium.

That was the situation of the 1970's. A series of shocks in 1972 and 1973 destabilized first the commodity markets and then the global economy in general. This process has been totally misinterpreted by the majority of economic forecasters and theoreticians. There are two basic reasons for this. First, the focus of the field has become too abstract. Franco Modigliani, the 1985 Nobel prize winner in economics views it as follows:

> **Q. Is there any intellectual movement in economics today that compares with Keynesianism in its early years?**
>
> **A. No. For one thing, Keynes certainly had his feet enormously planted on the Earth. These new rebellions in economic thought, like rational expectations -- which implies that economic policy making is useless, since the markets anticipate policy changes, thereby defeating their intended purpose -- are abstract. In my view they suggest little appreciation of the real world.[2]**

Second, the forecasting arm of the profession has become too dependent on quantitative analysis. A manipulation of the economic relationships of the past was expected to produce a projection for the future. Qualitative analysis, or to phrase it another way a direct analysis of the reasons behind certain relationships and whether these relationships were expected to change, was virtually ignored. This deficiency led Michael Blumenthal, a former U.S. Treasury Secretary, to state in 1981 that:

> *I really think that the economics profession is close to bankruptcy in understanding the present situation -- before or after the fact.*[3]

The abstract quantitive approach thus led most professional forecasters to recommend a policy mix that failed to address the problems at hand. The general economic situation thus continued to deteriorate until a realist like Paul Volcker, Chairman of the U.S. Federal Reserve, slammed on the monetary brakes in 1981. The cure for inflation, however, was worse than the disease for most primary producers. Commodity prices plummeted.

Overnight the economic reality changed. The disequilibrium economy of the 1970's -- with easy money, low real interest rates, and high inflation -- was changed

for the disequilibrium economy of the 1980's -- with tight money, high real interest rates, and low inflation. For primary producers, after facing commodity price inflation in the 1970's, the reality for the 1980's was commodity price deflation. That is the current economic reality.

2. Econometrics

The quantitative approach to economic analysis is called econometrics. Models of the economy are constructed based on data series generated from past economic activity. Once relationships are established (i.e. if every increase in national income of $1 stimulates an immediate 80 cent increase in consumption and a lagged multiplied increase of $4), these relationships are formalized in the model. Over time a statistical model of the economy is built, tested, revised, and formalized.

In the 1960's and early 1970's, the early models of the economy had an accuracy rating of 80 to 90 percent. This level of accuracy deteriorated during the 1970's and the models have generally tripped up in the 1980's. The earlier models, reflecting a more stable and predictable economic environment, are no longer reliable as they fail to account for such factors as banking deregulation, foreign exchange rate fluctuations and other considerations which are not easily converted to equations.

The creator and developer of the macroeconomic model, Michael K. Evans, has recently stated that these models do not work and that they have not worked for the last five years. Basic fundamentals have changed and have not been accounted for in the models, he claims. Mr. Evans is responsible for the startup and development of Wharton Econometric Forecasting Associates, Chase Econometrics and Evan Econometrics.[4]

Along with the difficulty of recalibrating relationships as they change, is the problem of identifying underlying changes in a trend. Normal cyclical patterns can be integrated into a model, but unpredicted trend changes cannot. This shortcoming resulted in analysts in the late 1970's and early 1980's to predict petroleum price trends from the experience of the 1970's. The uptrend of the 1970's was extrapolated forward through the 1980's with prices reaching the $U.S. 50 per barrel in mid-decade and reaching $U.S. 100 per barrel before the end of the decade.

In 1982 an econometric analysis on the "Agricultural Impacts of Crow Change" was produced.[5] The price forecasts for barley used in that model were for a Thunder Bay average price of $186 per tonne in 1982-83, $240 per tonne in 1985-86, and $367 per tonne in 1990-91. In November 1985, the price was $105 per tonne. The price forecasts generated for that analysis did not violate the generally accepted principles of model building. They just happened to be unrealistic.

The first place that one should look when examining an econometric forecast is the assumptions. If it is assumed that output prices will rise faster than input costs, and that one can sell all that is produced, then do not be surprised if the result shows a bright future for that industry. It was foreordained. These types of assumptions were used in most commodity price forecasting models during the 1970's and have continued to be used in the 1980's.

3. Market Research and Analysis

Research and analysis of a market is heavily dependent on a number of factors. However, there are two broad approaches that one can take -- deductive or inductive. A deductive approach takes a general situation and infers it to a particular one. An inductive approach, however, takes particular facts to develop a general observation. The standard approach in the field is deductive.

The great advantage of an inductive approach is that the analysis has a solid base. As facts are identified they are used to build a general framework which is consistent with the observed reality. The disadvantage of a deductive approach is that it begins with a general framework which is assumed to be consistent with the underlying particulars of the marketplace. This is often not the case.

The analysis of this paper has been largely inductive.

B. GLOBAL ECONOMIC ENVIRONMENT

1. Global Financial Integrity

It is difficult to separate the debt problem from the inflationary environment of the 1970's and the general loosening of financial controls, as they are so totally intertwined. Petroleum price increases provided the first spark to the debt and inflationary spirals, but all of this had been underlaid by a continued deterioration in global financial integrity. The 1971 decision by President Nixon to no longer keep the U.S. dollar on the gold standard has been noted by some as the major beginning point for this widespread deterioration.

By discarding the gold standard, the U.S. no longer claimed that the dollar was as good as gold. Dollars could no longer be exchanged for gold, only for more dollars. The world's system of fixed foreign exchange rates had also begun to crumble at this time. Canada in 1970 was the first major country to float its currency, but the Bretton Woods agreement was already in the process of disintegration due to increasing global financial strains. By March 1973, all currencies were floating, although some nations did attempt to fix their currencies in relation to other specific currencies.

Thus the world evolved into a financial system that was purely paper based. The external constraints that had been in place under the Bretton Woods agreement no longer enforced financial discipline on the various national economies. Excesses that in the past would have created foreign exchange crises, now were simply floated away. In fact, the shift to a floating exchange rate system for major currencies also contributed to the rise in world liquidity by reducing the overall demand for foreign exchange reserves.

It was in this environment that the OPEC induced petroleum price increases were first faced.

2. Petroleum and Inflation

The 1973 petroleum price hikes caught virtually everyone offguard. As energy is critical, directly or indirectly, to most types of economic activity, production costs in most industries jumped sharply. The higher production costs were immediately passed on to consumers who in turn demanded higher wages. This was the final piece needed to ensure cost-push inflation. Nobody wanted to pay the higher cost, so it was simply passed on to the next person. The quantity of paper outstanding increased sufficiently to cover this process.

> The developed countries employed easy monetary policies both before and after the first oil shock; as a result, economic growth in developing countries continued. The change in trade flows and expansionary monetary policies in the OECD nations generated liquidity previously unavailable to the international financial system.[6]

At the same time, we were beginning the largest capital transfer in the history of mankind, as OPEC coffers began to bulge.

> The oil shock of 1973-74 threw many countries into a balance-of-payments disequilibrium. The fourfold increase in oil prices by members of the Organization of Petroleum Exporting Countries (OPEC) dramatically altered payment flows and the international financial environment, initiating the process by which significant debt was accumulated.[7]

This debt accumulation was created from a surplus of loanable funds in the global financial system. As a result interest rates were very low, occasionally even negative in real terms, and bankers were extremely easy with their lending policies. This surplus money needed a home and many avenues were pursued to dispose of the surplus.

> International bankers recycled this liquidity in the form of petrodollar deposits, by beginning a massive lending program to middle-income oil importing countries. These bankers anticipated high returns on investments.[8]

Much of the OPEC money was funneling through the global financial system and into the Third World, inflating and stimulating as it went.

> The world economy weathered the first oil crisis without much difficulty. Initial debt levels were low enough that accumulation did not overly burden the world payments system. Furthermore, the infusion of large amounts of international capital into the world economy generated an international expansion led by export growth. For all non-OPEC developing

> countries, the total dollar value of exports was 2.5 times greater in 1980 than in 1975. Furthermore, real growth in gross domestic product (GDP) for all developing countries averaged 5 percent a year for this period.[9]

3. Low Interest Rates and Asset Appreciation

The first oil price shock quickly raised commodity prices while having only a nominal impact on interest rates. Rising prices for commodity exports also improved the cash flow for many nations, further encouraging the desire to borrow.

> 1973-81 was a period of general price increases for raw materials, not only for oil. Although other resources did not, in general, increase in value as drastically as did oil, their increases were nonetheless dramatic. Examples, for the period 1972-80, include a quadrupling of the dollar prices of bauxite and rubber, a tripling of prices for aluminum and coffee and a doubling of prices for nickel, copper, and manganese.[10]

These low interest rates and increased borrowings both stimulated and inflated the global economy as they were channeled through the system. Much of the OPEC money was funneled into the Third World, who in turn used it to buy from the industrial nations, who in turn passed some of it back to the OPEC nations. And so it continued, a constant recycling of surplus funds. At the same time, this led to a fairly generalized appreciation of assets in many sectors.

Throughout the 1970's and through 1980, the Canadian and U.S. economies suffered many shocks -- especially through higher food and energy prices. However, through it all, average consumer real income increased as much as it did during the 1960's. In addition hard assets, and especially real estate, also increased sharply in value leaving most people with a considerably higher net worth in 1980 than was the case in 1970.

In the latter part of the 1970's, many consumers began to borrow against this asset appreciation in order to continue to meet their increased expectations. The net worth of a household has a considerable impact on that household's spending patterns. As a result, increased net worth must be considered similar to income. When consumers borrow against this net worth, it must be considered identical to income. Failure to take this factor into account explains why most economists underestimated the strength of the U.S. and Canadian economies throughout the 1970's.

For example, U.S. borrowing by homeowners on their houses for consumption purposes was basically non-existant prior to 1970. From 1970-75 it has been estimated to have been equal to 1 percent of GNP. By 1980, this figure had increased to 2 percent of GNP. If economists had included this new "income" source in their econometric projections, they would have predicted considerably stronger economies than they actually did.

The benefits of low interest rates and high asset and product prices also benefited the developing world.

> The growth rates in money during the seventies were high by postwar standards, giving the developing world two important benefits: increased demand for all goods and services and low real rates of interest. Rising inflation in the industrial West, as a consequence of the rapid money growth, gave a competitive edge to products in the developing world, especially in the United States, making repayments easier.[11]

To some degree the economic strength of the late 1970's was illusionary. The economic activity of the 1970's was overstimulated through consumers and producers cashing in on appreciated assets. In addition debt was financed very cheaply through the easy money policies being pursued by the global financial system.

> For developed countries as a whole, money (M1) increased at average annual rates of over 10 percent from 1971 to 1973, providing considerable liquidity for the raw-material price increases of 1972-74. This rise was followed by a slowdown in the growth of money in 1974. From 1976 through 1979 annual increases in money again averaged 10 percent.[12]

4. High Interest Rates and Stagnation

After the 1973-74 OPEC oil price increases, the general reaction in the financial markets had been to find ways to recycle petrodollars and to accommodate the jump in energy costs. As noted above, energy cost jumps were accommodated mainly through a passing through process where each piece of the system passed through price increases to the next in line. Petrodollars were recycled through the offering of irresistably low interest rates.

However, by the end of the decade it had become quite obvious that the issues had to be addressed and that oil price increases could not be simply passed down the line. Led mainly by the U.S. Federal Reserve Bank, the monetary taps were turned off. The oil price increases of 1979 were followed by 3 years of declining monetary growth and the rates of money supply increase from 1979 through 1982 were all below that observed in 1974.

> If the oil price rise of 1973-74 set the stage for the large debt buildup, the second oil shock of 1979-80 set the stage for the world recession of 1980-83. The second oil price increase was more significant than the first one based on the far different policy responses in the developed world. The approach to the 1973-74 increase had been to find ways to recirculate petrodollars and to accommodate the jump in energy costs. The response to the 1979-80 increase, however, was for the major industrial countries to simultaneously undertake contractionary monetary policies. The world inflation that was initiated by the 1973-74 oil increase, but by no means limited to it, proved unacceptable to the West, and Western countries felt that only traditional measures could deal with the inflation. The sudden lowering of monetary growth sharply slowed the world economy, raised real interest rates, and made the debt a burden. The impact of the responses to the second oil shock induced the current repayment problems.[13]

From 1975 to 1980, real interest rates averaged a negative 3 percent. From 1981 to 1983 the average was plus 17 percent, a jump of 20 points. The initial reaction to the 1979 increase was similar to that after the 1973-74 increases. Debt accumulation continued at a rapid pace as borrowers expected a continuation of the old low interest rate policy. A 20 percent prime rate was quite manageable if a 30 percent increase was expected in the next six months from the asset one acquired with the loan.

At that time asset appreciation totally eclipsed the question of debt service costs. But then the music stopped. The recession in the West and the resulting fall in prices of export goods and some assets forced debtors to make unexpected debt payments. As real interest rates increased, debt service costs leapt higher and the debt crisis was born. The global recession of 1980-83 has hit the primary commodity sector particularly hard. U.S. fiscal policy has helped to pull up the global economy from the 1983 lows but this has not led to an increase in primary product prices. In fact the high U.S. fiscal and trade deficits in recent years has not resolved the debt crisis elsewhere, but it has created a worsening debt problem within the United States.

II. GLOBAL AGRICULTURAL ENVIRONMENT

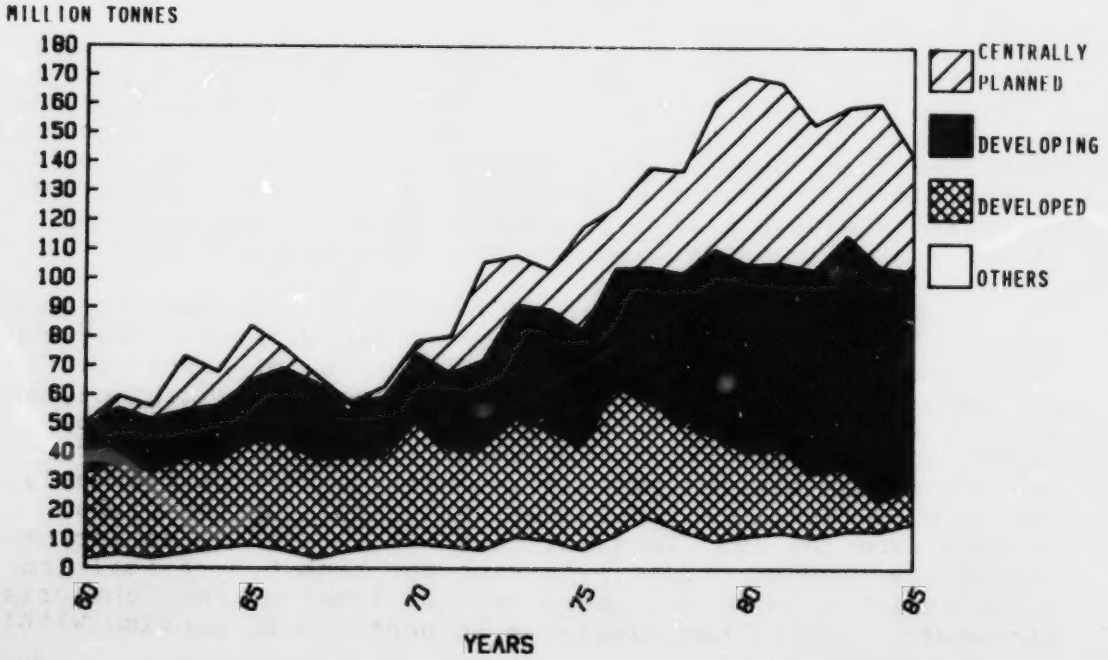
A. WORLD GRAIN MARKETS

1. Global Trade

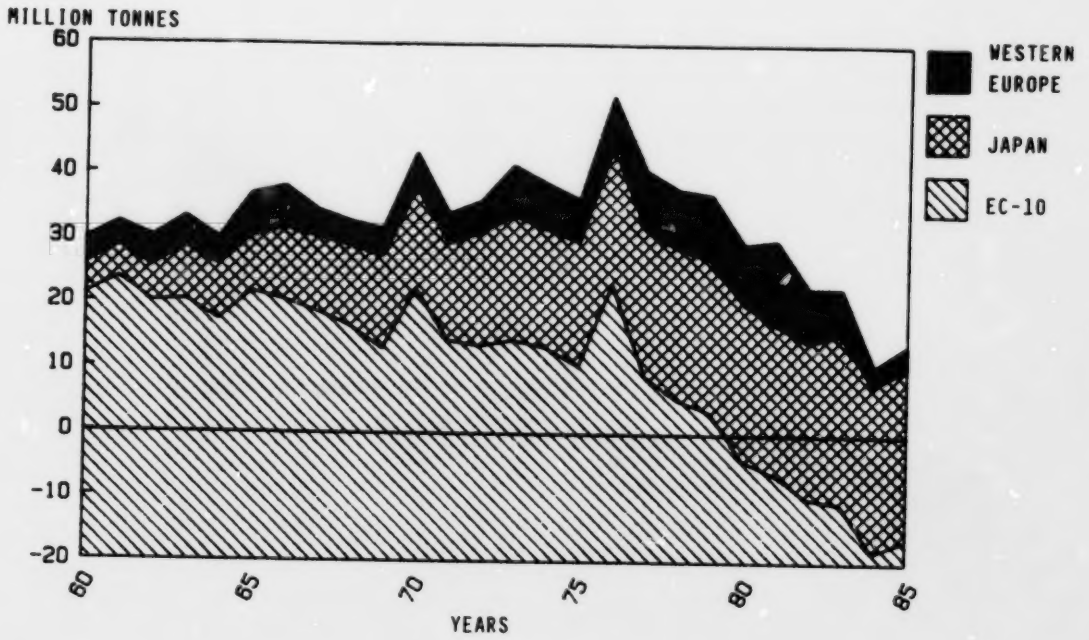
It is seldom easy to single out one factor which fully explains a fundamental shift in market conditions. For grain, however, the major swing factor over the past 25 years has been changes in global grain trade patterns. After a couple of mild bulges in demand in the 1960's, a sharp increase in global import demand was experienced in the 1970's. This increase, coupled with the inflationary environment of the time, fueled major market price increases. Although grain prices remained relatively strong throughout most of the 1970's, in hindsight it is obvious that most of the necessary market adjustment had already taken place by the mid-1970's.

At the beginning of the 1980's, global import demand peaked. U.S. grain policies in the early part of the decade tended to camouflage the trend through the 1983-84 crop year, and, a surge in Soviet import demand in 1984-85 also prevented a full awareness of the degree of overcapacity in the global grain markets. Once the United States drops its support prices to "market clearing" levels the full degree of the problem will be generally recognized.

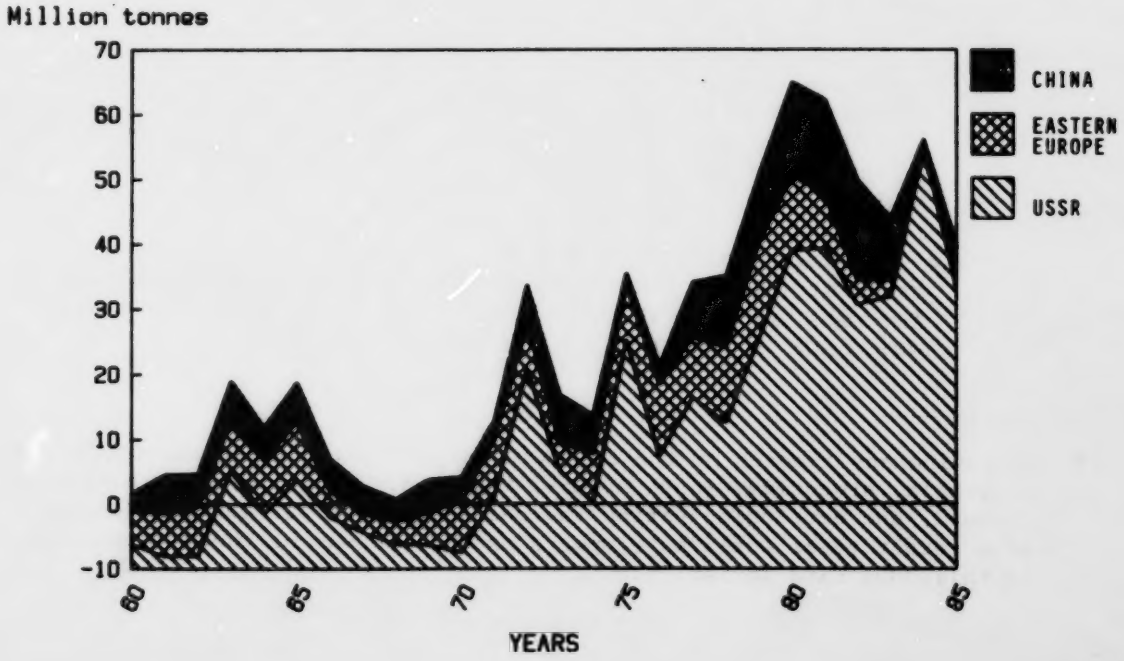
NET GRAIN IMPORTS
MAJOR BUYERS



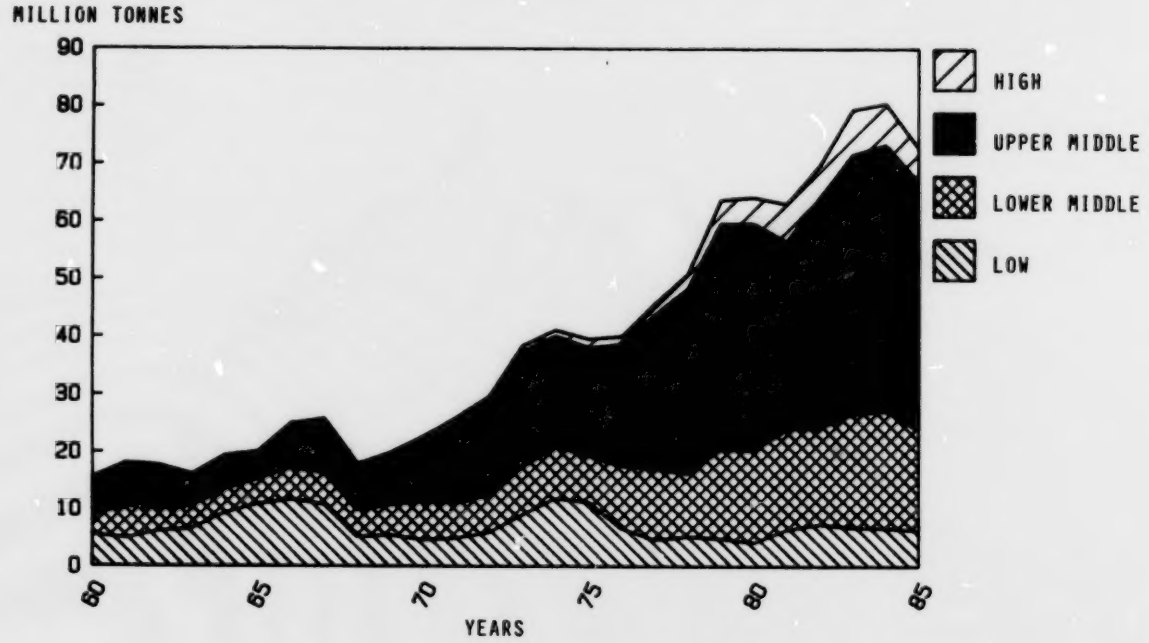
DEVELOPED NATION GRAIN IMPORTS



CENTRALLY PLANNED NATION GRAIN IMPORTS



DEVELOPING NATION GRAIN IMPORTS



a) The 1960's

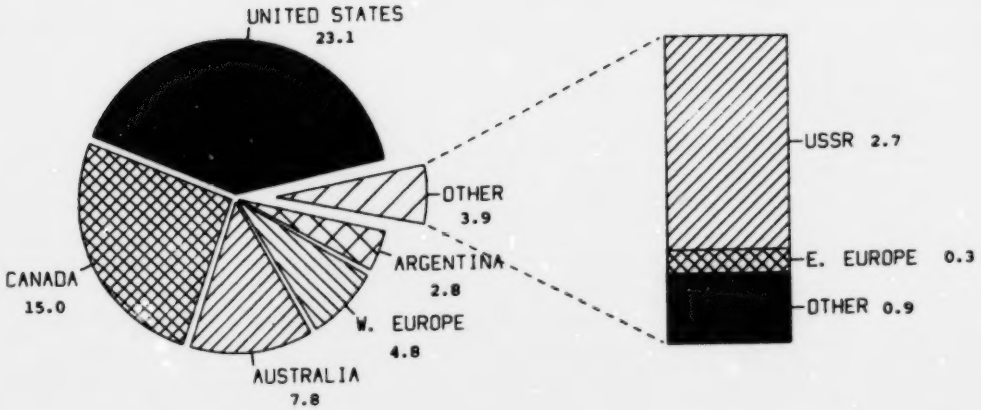
In 1960-61, net world grain imports totalled 50.2 million tonnes. Of that total, the 10 nations which currently comprise the European Community accounted for 21.1 million and other developed nations imported 8.6 million tonnes. The centrally planned economies had net imports of only 1.6 million tonnes, as Soviet Union exports supplied Eastern European import demands. The developing nations imported 15.6 million tonnes, with a significant proportion of this being food aid shipments.*

Throughout the 1960's, Japanese grain imports rose steadily, accounting for all of the growth in imports by non-EC developed nations. This increase was from a total of 4.7 million tonnes during the

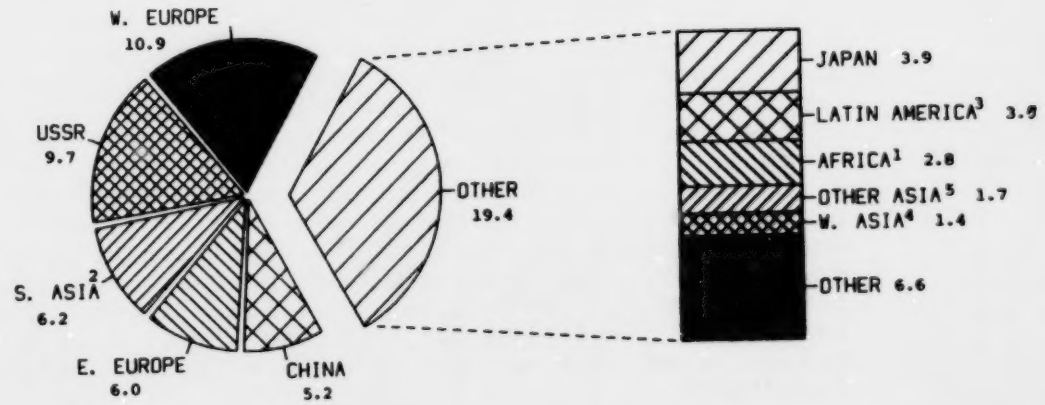
---

* Excluding any imports by the following exporters: United States, Canada, Australia, Argentina, South Africa, Thailand. The developed, centrally planned, and developing nation regions cover most but not all nations. As a result total world net imports exceed the sum of these three regions in this USDA data series.

WORLD WHEAT TRADE
1963-64
(million metric tons)



EXPORTS 57.4



IMPORTS 57.4

1) Algeria, Egypt, Libya, Morocco, Nigeria, South Africa, Sudan and Tunisia
2) Bangladesh, Ceylon, India, Indonesia, and Pakistan
3) Mexico, Brazil, Chile, Colombia, Peru and Venezuela
4) Iran, Iraq, Israel, Jordan, Lebanon, Saudi Arabia, Syria and Turkey
5) Philippines, Taiwan, and South Korea

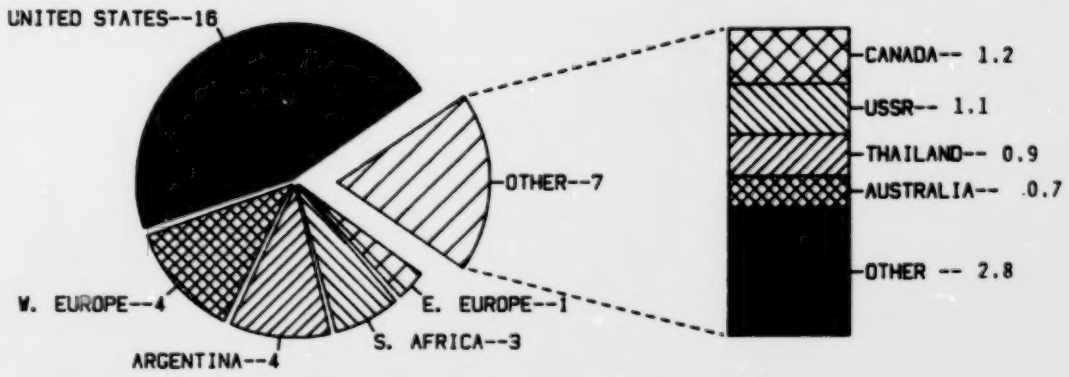
1960-61 crop year to 14.4 million tonnes in 1969-70. Imports by the EC-10 nations held steady during the first seven years of the decade. Then in 1967-68 net import demand by the EC-10 nations began to fall. With the exception of 1970-71 and 1976-77, two years of exceptionally bad crops, net-import demand has steadily fallen from the 1966-67 level of 20.3 million tonnes. By 1980-81, this continued decline in net import demand reached the point where the EC became a net exporter and net exports in 1984-85 totalled 18.3 million tonnes.

For the centrally planned economies, in 1960-61 the Soviet Union was a net exporter of 6.2 million tonnes with Eastern Europe and China net importers of 5.2 and 2.6 million tonnes, respectively. Although the Soviets swung to a net import position in 1963-64 and 1965-66, for most crop years in the 1960's they remained in a net export position. Eastern European and Chinese imports rose steadily in the early 1960's before peaking in 1965-66 and then declining through to the end of the decade. Total net imports of grain by the centrally planned economies peaked in 1965-66 at 18.7 million tonnes. In 1968-69, net imports totalled only 700,000 tonnes, the low for the decade.

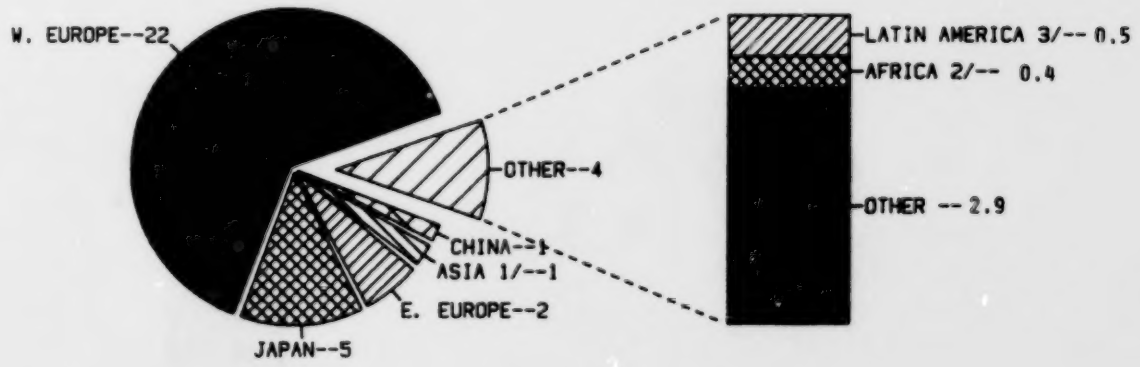
In the 1960's, purchases by the centrally planned economies helped to temporarily, partially alleviate burdensome grain surpluses in North America. The only other outlet for grain was for sales to the developing world. Net imports by developing nations were 15.6 million tonnes in 1960-61 and rose gradually to 20 million tonnes in 1965-66. The next two years saw imports rise to 25 million tonnes each year and then dropping to 20 million at the end of the decade.

By the end of the decade, in 1969-70, net world grain imports totalled 63.2 million tonnes. Demand from the developed world had increased slightly, as the 10 million tonne increase in Japanese demand (from 4.7 to 14.4 million tonnes) outweighed the 8 million tonne decrease in EC imports (from 21.1 to 12.8 million). Demand from centrally planned economies ended the decade at 3.8 million tonnes, down sharply from the mid-decade peak of 18.8 million but up from the 1960-61 level of 1.6 million. Net imports of developing nations rose almost five million tonnes, from 15.6 million in 1960-61 to 20.0 million in 1969-70.

WORLD COARSE GRAIN TRADE
1963-64
(million metric tons)



EXPORTS 34.5



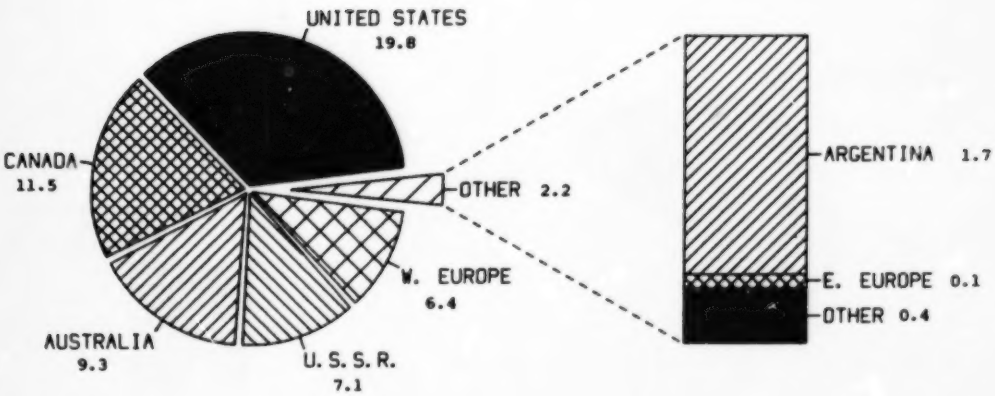
IMPORTS

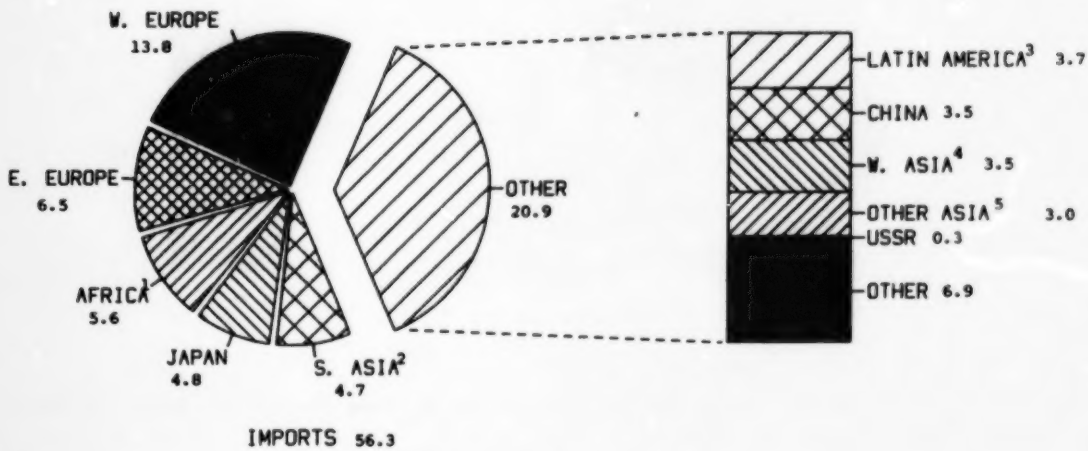
1/ Israel, Lebanon, Saudi Arabia, West Malaysia, Hong Kong, South Korea, Taiwan.

2/ Algeria, Egypt and Kenya.

3/ Venezuela, Chile, Peru, Colombia, and Mexico.

WORLD WHEAT TRADE
1970-71
(million metric tons)





1) Algeria, Egypt, Libya, Morocco, Nigeria, S. Africa, Sudan, Tunisia
2) Bangladesh, Ceylon, India, Indonesia, Pakistan
3) Mexico, Brazil, Chile, Colombia, Peru, Venezuela
4) Iran, Iraq, Israel, Jordan, Lebanon, Saudi Arabia, Syria, Turkey
5) Philippines, Taiwan, S. Korea

b) The 1970's

To catch the tone of the 1970's, it is best to start with the 1971-72 crop year. Market conditions in 1970-71 were more reflective of the 1960's. In 1971-72, net import demand* totalled 80 million tonnes, with the developed nations accounting for 34 million, the centrally planned economies 12.8 million, and the developing nations 26 million. This net import demand was an increase of 60 percent from 1960-61 levels, but still resulted in excess grain production capacity in the major grain exporting nations.

Throughout the 1970's Japanese grain demand rose steadily, from 15.8 million tonnes in 1970-71 to 23.7 million in 1979-80. Demand from non-EC Western European nations also rose, from 5.2 million in 1970-71 to 9.9 million in 1979-80. This trend was counterbalanced by a drop in EC grain imports. EC net imports of 22.1 million tonnes in 1970-71 and 23.0 million in 1975-76 reflected exceptionally bad years, and net EC imports in other years in the first half of the 1970's ranged between 10 and 14 million tonnes. In the final three years of the 1970's EC net imports dropped from 8.8 to 5.1 to 3.2 million tonnes.

In the developing nations grain imports rose sharply throughout the 1970's, starting with 22.6 million tonnes in 1970-71 and ending with 63.6 million in 1979-80, an increase of almost 300 percent throughout the decade. National debt among the developing countries grew by more than 20 percent annually after the 1973-74 oil crisis, exceeding growth rates for both gross national product and exports. Thus as the decade progressed, more and more of the imports into the developing countries were financed with borrowed funds.

For the centrally planned economies there was a sharp increase in imports during the 1970's, with a 10 year average net import level of 22.5 million tonnes. Chinese imports averaged 4 million tonnes per year through 1976-77, before rising to 11 million tonnes late in the decade. Eastern European imports

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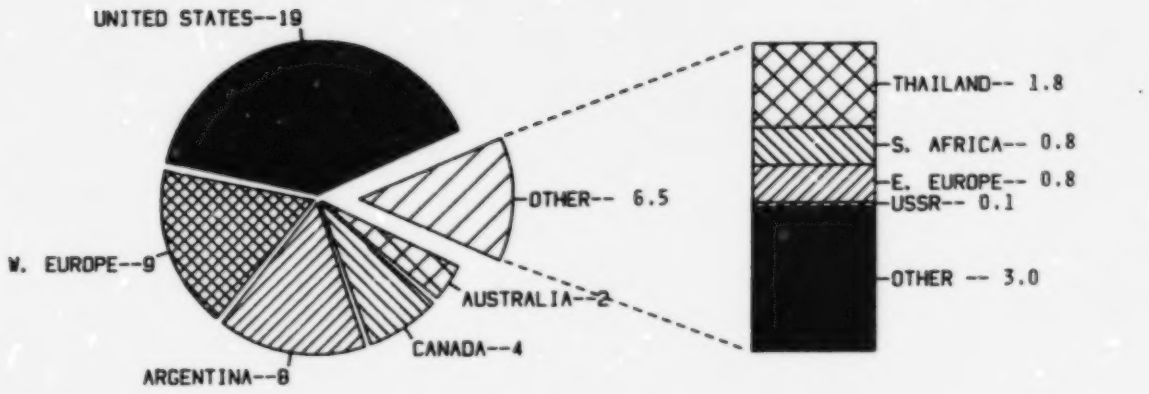
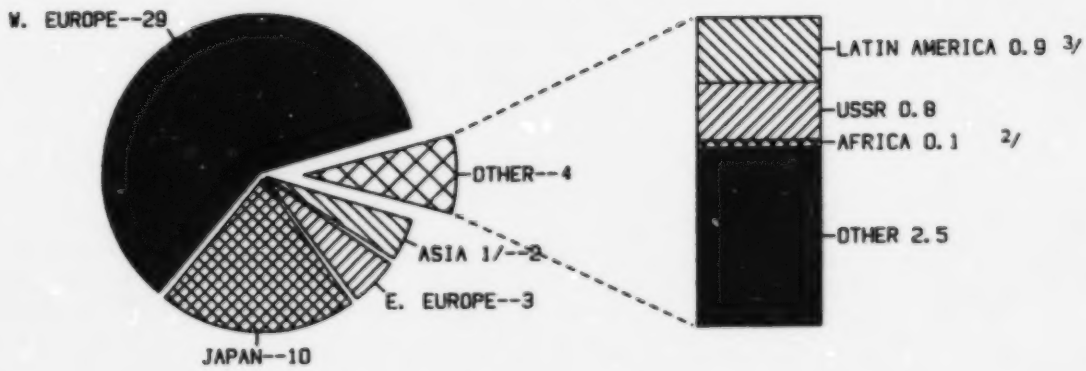
* These USDA figures are total world less the following major exporters: United States, Canada, Australia, Argentina, South Africa, Thailand.

WORLD COARSE GRAIN TRADE
1970-71
(million metric tons)



EXPORTS 48.5



IMPORTS

1/ Israel, Lebanon, Saudi Arabia, West Malaysia, Hong Kong, South Korea, Taiwan.

2/ Algeria, Egypt and Kenya.

3/ Venezuela, Chile, Peru, Colombia, and Mexico.

followed the same trend, although at a higher average level. The Soviet purchases were more erratic, going from 1.1 million in 1971-72 to 20.9 million in 1972-73, falling to only 5.1 million in 1973-74 and 200 thousand tonnes in 1975-76, and then leaping to 25 million tonnes in 1976-77. However, after dropping to 7.3 million tonnes in 1977-78, Soviet imports trended higher through to the end of the decade, establishing the Soviet Union as a large regular buyer.

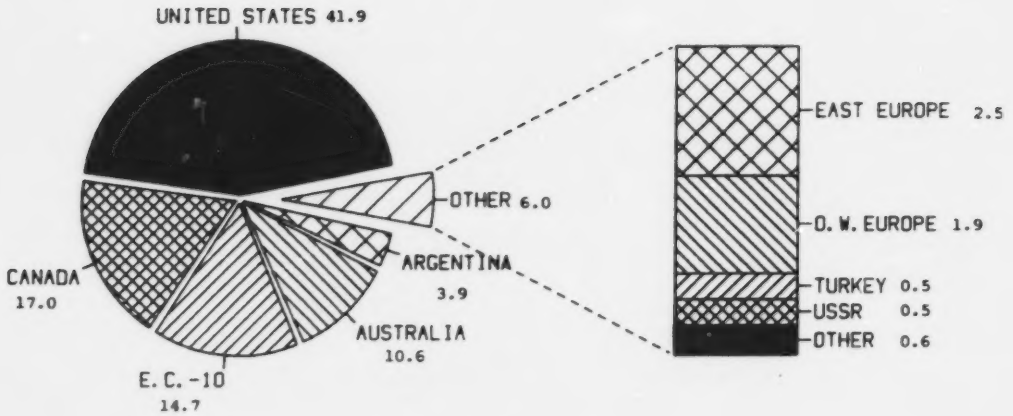
By the end of the decade global net imports, excluding imports by major traditional exporters, totalled 160.9 million tonnes versus 78.3 million at the beginning of the decade. As the decline in EC imports resulted in little change in net imports by the developed nations, most of this net increase was the result of increased purchases from the developing world and centrally planned economies.

c) The 1980's

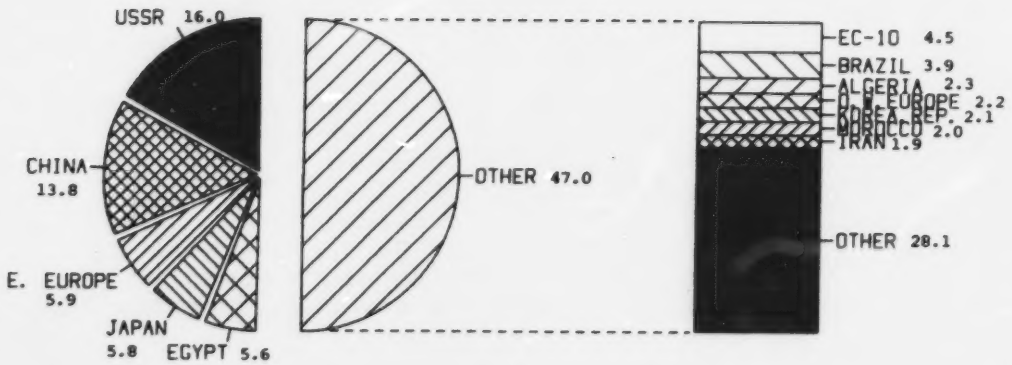
After rising slowly in the 1960's and then quite sharply in the 1970's, the market opportunities for traditional global exporters has shrunk significantly in the 1980's.

> After temporarily surging upward in 1979-80, the U.S. share of global coarse grain trade dropped back to about the 60 percent level for the next four years. That was approximately the same trade share the U.S. had obtained during the 1972-73 to 1978-79 period. Then in 1984-85, according to preliminary data, the U.S. share of world coarse grain trade dropped to 57 percent from 60 percent the previous year. Except for 1974-75 when the U.S. corn (maize) crop was severely reduced by drought, 1984-85 represented the lowest U.S. share of global coarse grain exports since 1971-72. The declining U.S. trade share in 1984-85 reflects increasing export shares originating in Western Europe, as well as reemergence of the People's Republic of China as a corn and sorghum exporter.[14]

WORLD WHEAT TRADE
1980-81
(million metric tons)



EXPORTS 94.1

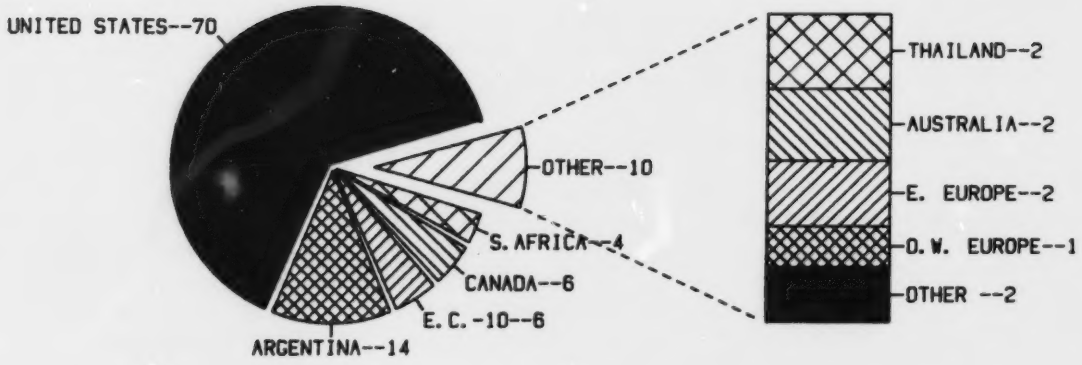


IMPORTS 94.1

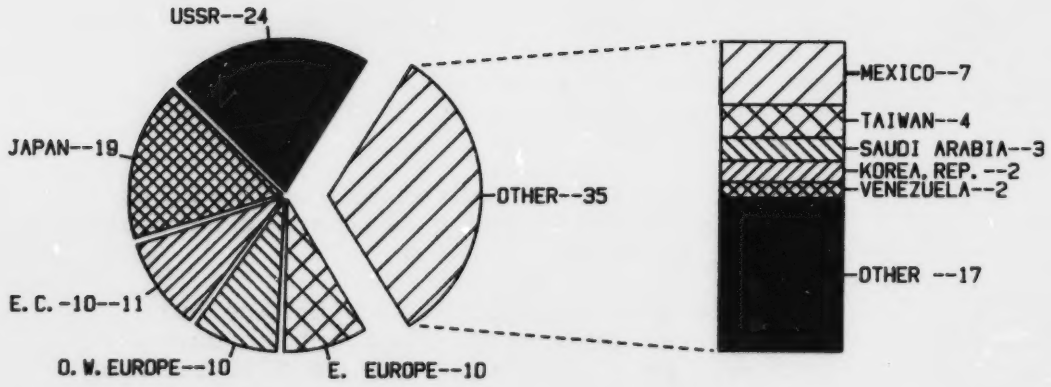
In addition the EC-10 nations, which accounted for 40 percent of global imports in 1960, became net exporters during the 1980's, taking 10 percent of the available market in 1984-85. Imports by Eastern European nations and the People's Republic of China have also dropped sharply, from a total of 25.9 million tonnes in 1980-81 to only 6.8 million projected in 1985-86. For the developing nations, the USDA does not forsee a strong market demand for grain.

> The developing world has been the fastest growing market for U.S. agricultural products over the past decade. But the present international debt crisis has cast a pall over export prospects in the 1980's.
>
> The current debt problem had its origins in 1973-74, the period of the first steep oil price rise. At that time, the developed world chose to accommodate higher oil prices by adopting an easy money policy that injected a lot of new liquidity into the international financial system.
>
> International bankers, anxious to recycle this oil money, began a massive lending program to middle-income oil importing countries. As a result, international debt swelled by more than 20 percent a year during the 1970's.
>
> By 1982 the developing world had accumulated about $700 billion in debt. Much of this debt was owed to private lenders at variable interest rates. When interest rates shot up in 1980 and 1981, payment became difficult. Moreover, roughly one-fourth of the debt was short term which meant it was always subject to repayment and thus a constant threat to cash flow.
>
> Many of the United States biggest markets in the developing world are among the countries deepest in debt.
>
> In fact, the 18 countries which are our best market prospects -- and which each purchase on a commercial basis $200 million or more worth of agricultural products annually -- owe roughly two-thirds of the Third World debt. They also have more than 40 percent of their debt obligations in private and short-term loans, underscoring their vulnerability to changing world monetary conditions.[15]

WORLD COARSE GRAIN TRADE
1980-81
(million metric tons)



EXPORTS 108.8



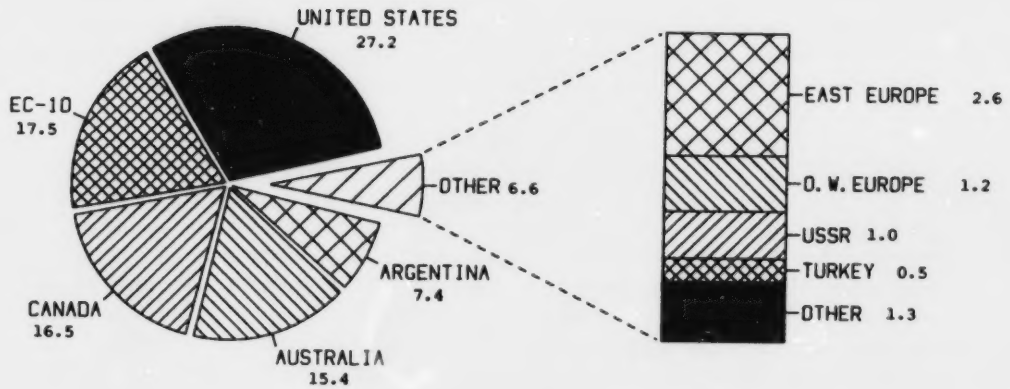
IMPORTS 108.8

Japanese net grain import demand has continued to grow during the 1980's, but at a much slower pace than had been experienced in the previous two decades. As EC and other Western European demand has been on the decline since the beginning of the decade, total net imports by developed nations has been dropping. In 1980-81 the net imports of the major developed nations totalled 29.2 million tonnes. In 1984-85 this had dropped to 10.4 million tonnes. This 19 million tonne drop in demand facing traditional exporters was exacerbated by an increase in exports from the PRC to Japan, further cutting the export market potential for the traditional export nations.

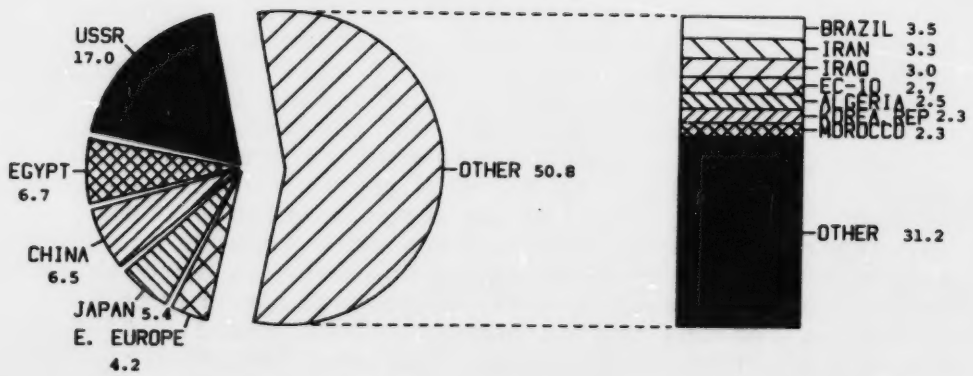
For the centrally planned economies, Eastern Europe has reacted to the credit crunch by sharply dropping imports. Improved output has brought this region close to self-sufficiency in grains. The People's Republic of China has also increased grain output sharply in recent years, and can also be considered essentially self-sufficient. In fact, the PRC could quite conceivably become a net exporter into the Pacific Rim. For the Soviet Union, net imports were a record high 55 million tonnes in 1984-85. However, some incentives have been placed into the Soviet agricultural system. Soviet grain production in the last half of the 1980's could very likely be as much of a success story as the output record of the first half of the 1980's has been a disappointment. The Soviet target output of 200 million tonnes in poor years and 250 million tonnes in good years is definitely within reach. If it is reached, Soviet import demand will plummet.

For the developing nations demand has not yet verifiably peaked, although 1984-85 could well prove to be the pivotal year. Initial projections for 1985-86 do indicate that a dropoff will occur. Although there has been some growth in the decade to date, once OPEC nations are removed and the impact of the African drought is discounted, much of the remaining demand is still heavily dependent on credit sales or food aid. In addition as other markets are drying up, exporters are having to turn more towards the weaker markets. In most cases the imports into these nations are reflective more of domestic problems than of a healthy market demand. As a result of the credit crunch, developing nations have had to slash imports. To date this has been mainly for non-grain items.

WORLD WHEAT TRADE
1985-86
(million metric tons)

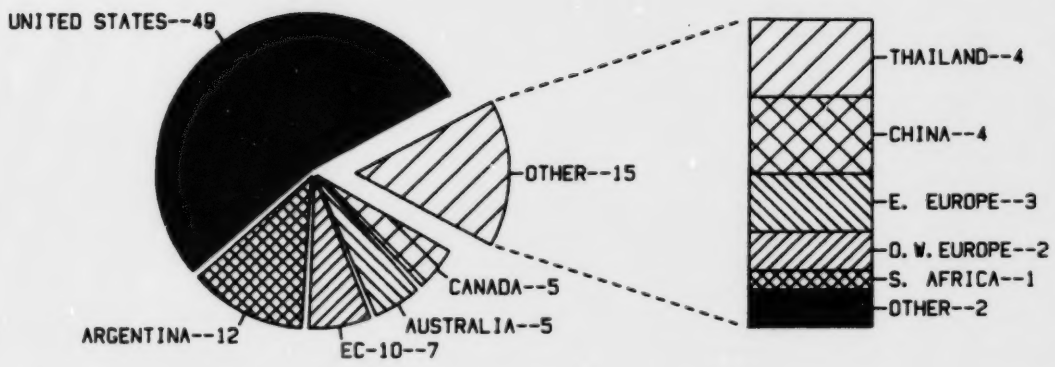


EXPORTS 90.6

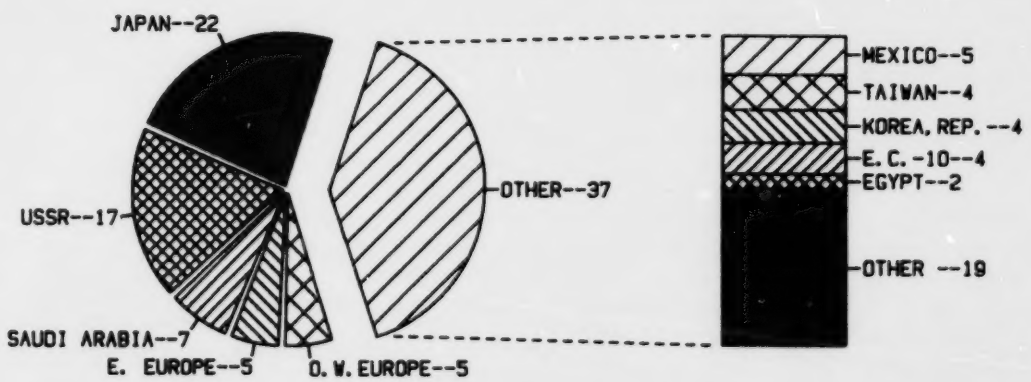


IMPORTS 90.6

WORLD COARSE GRAIN TRADE
1985-86
(million metric tons)



EXPORTS 92.2



IMPORTS 92.2

In order to meet increasing debt payments, developing countries have had to slash imports.

In 1982, for example, seven Latin American countries reduced their imports by almost 20 percent. Several nations made even steeper cuts. Chile, Ecuador and Peru cut their purchases by 30 to 40 percent, Venezuela by 50 percent and Mexico by 60 percent. In the first half of 1983, Argentina and Brazil reduced their imports a further 20 to 30 percent.

At the same time, a number of other big borrowers, concentrated in Asia, were following the same pattern. As a result, their merchandise imports, which had grown by 27 percent in 1980, leveled off through 1982 and declined by 3 percent during the first half of 1983.[16]

If no financial constraints are forced on the developing countries and they can continue to borrow freely to finance the imports they need and make their accrued interest payments, their economies could grow at about 6 percent a year through 1987, based on historical trends. With this kind of economic growth, U.S. agricultural exports would rise by roughly 8.5 percent annually.

However, such growth would involve a debt buildup from 1982's approximately $700 billion to $2.9 trillion in 1987, representing more than a fourfold increase in five years. This is an even faster rate of growth in debt than the very rapid rates between 1973 and 1981.

Given the current world environment, and the fact that in 1983 the net transfers to the developing countries were estimated to be a negative $11 billion, it seems unlikely that lenders will allow the developing world to increase their debt burden.[17]

2. U.S. Policy

The Food and Agricultural Act in the United States has traditionally had a four year lifespan. The 1977 Act expired in 1981 and the 1981 Act was scheduled to expire in 1985. The next Act may not be passed before the beginning of 1986, but provisions are still intended to retroactively take effect as of October 1, 1985. The Act is intended to have a 5 year lifespan.

A Joint Economic Committee (JEC) of the U.S. Congress has produced a study titled: "The Changing Economics of Agriculture: Challenge and Preparation for the 1980's". This study was conducted in 1982, 25 years after a 1957 JEC study titled: "Policy for Commercial Agriculture".

Judging from the comments of many of the participants in the current round of debate on the U.S. Agriculture policy, these findings are the basis for many of the current recommendations. In order to put this issue into perspective, the findings of this study group are reprinted in full later in this section.

According to the Chairman of the Committee:

> The study traces the economic development of U.S. agriculture over the last 25 years, documents its current economic condition and provides professional judgments on its future economic prospects. There is an immediate need to re-evaluate traditional farm policy in recognition of international economic developments and challenges to the United States in agricultural export markets.
>
> The United States is at a pivotal point in this nation's agricultural history. As the cornerstone of the entire economy, future growth and prosperity for all Americans are at stake. Clearly, our traditional approach of attempting to increase prices by unilaterally reducing acreage and accumulating suppplies has been counterproductive, too costly and futile. Domestic efforts are immediately offset by other exporting countries which are eagerly increasing their acreage. It is time to implement a new era of agricultural policy -- an ambitious, aggressive, international

> farm policy which has as its foundation the most powerful partnership -- the unmatched productivity of the American farmer and the economic strength and ingenuity of our representative government.

The full findings of the Committee are self-explanatory. The underlining of some statements is done simply to highlight some of the key issues.

FINDINGS

The following "Findings" of this staff study are presented more for the purpose of focusing needed debate than to suggest conclusions:

(1) <u>While agriculture's financial bottom line today is dishearteningly similar to its economic condition 25 years ago, the causes of the "farm problem" have materially changed.</u> In 1958 U.S. agriculture was overproducing for the domestic market, but today <u>it is apparently overproducing for the world market</u>. In the 1970's excess resources in agriculture were absorbed by escalating world demand. To a very significant extent today's "farm problem" can be traced to the global recession.

(2) Proposed solutions to the "farm problem", however, have not changed. The 1958 JEC report was accurate when it concluded: <u>"In view of the economic setting likely to exist for farm policy in the years ahead, production control will continue to be a main reliance for improvement of farm income."</u> It is important to remember that this conclusion was premised on a very pessimistic perception regarding the future growth in the demand for U.S. agricultural products. Since 1958 the demand for U.S. farm products has increased almost 50 percent. Yet real farm net income in 1981 is about one-half of what it was in 1958.

(3) <u>The internationalization of U.S. agriculture and world competition has brought into question the effectiveness of unilateral production controls.</u> The market is signaling that a reduction in output is needed. When the United States implements very costly acreage reduction and grain storage programs, other

exporting nations take advantage of these actions and proceed to plant and harvest record acreages. Making matters worse, commodity loan rates are raised which in turn raises the world's floor price for grain, thereby increasing the incentive for further increases in world production. The result of this frightening market trend is a vicious downward spiral in U.S. world grain market shares and the decline of the U.S. agricultural industry. If the U.S. continues to cut back production and increase budget outlays while its competitors aim for all-out production, the U.S. agricultural base could easily shrink and become less productive.

(4) Clearly no country would willingly subordinate its domestic interests to any form of international cooperative agreement. Bilateral contracts between countries for sales and purchases, and tariff and trade concessions appear to be more fruitful; both countries would be assured of real benefits. However, this implies that a degree of free market flexbility of prices may be lost.

(5) The use of agricultural product embargoes as a foreign policy weapon probably did more harm to the U.S. economy than to the economies of nations to which they were applied. Also, not honoring sales contracts has had lingering effects, since the reputation of the U.S. as a trading partner has been damaged. Non-agricultural economic sanctions (for example the U.S. ban on equipment and technology to construct the U.S.S.R. pipeline) have agricultural trade ramifications as well.

(6) Farmers can receive substantial net income benefits from stable and consistent monetary and fiscal policies. Lower interest and inflation rates, improved domestic real personal incomes, and a more realistic U.S. dollar value in foreign exchange are essential for agriculture's economic recovery.

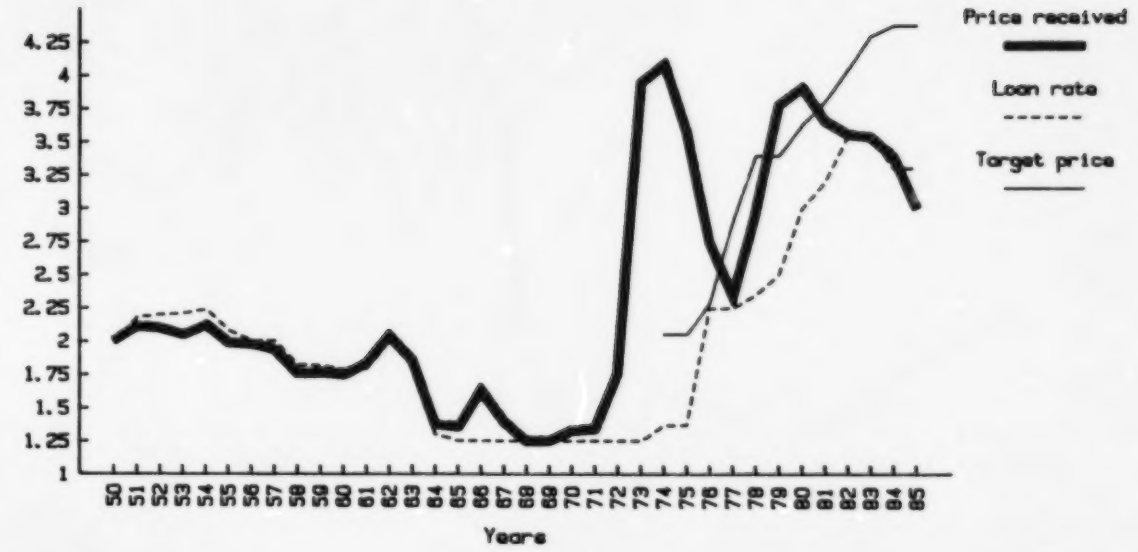
(7) Production decisions of farmers must take into account factors of global supply and demand. In 1982 for the first time in recorded history, farm expenses will exceed farm cash receipts. This event is projected to occur again in 1983. Excluding non-money and other income sources, the only reason U.S. agriculture will show a positive net income will be because of government payments. More bluntly stated, farm net income in 1982 and probably in 1983 will be a transfer payment. The revenue requirement of that transfer payment may well become more burdensome in the future, since higher costs result in higher support prices. Continued reliance on government support is hardly a future that any farmer, consumer, taxpayer or public official desires.

(8) The current world surplus of agricultural commodities will continue to put a damper on the U.S. agriculture economy. An acreage reduction plan with a successful participation rate, while very costly to the federal government, cannot guarantee successful results in reducing world food supplies. Foreign competitors appear to be ready and able to capitalize on any production disincentives employed in the U.S.

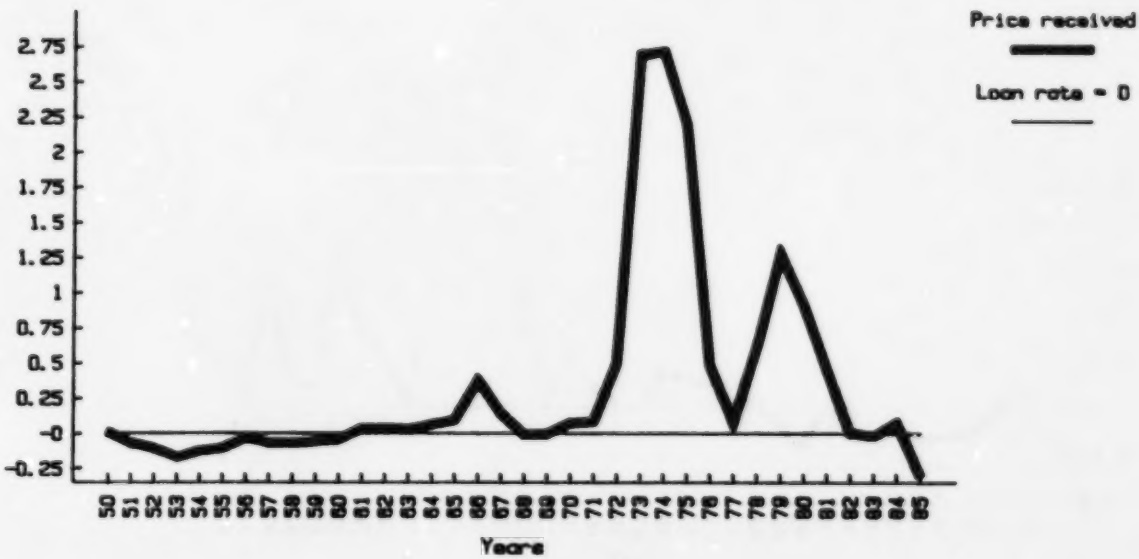
(9) On the domestic side, agriculture is a major contributor to the well being and standard of living enjoyed by Americans. Food costs relative to income are among the lowest of all industrialized countries in the world. No other country offers the variety and quality that U.S. consumers are offered.

(10) Exports of agricultural commodities play a very important role in U.S. balance of payments. In 1981, agricultural trade exceeded $43 billion, netting a positive balance of over $26 billion. By comparison, agricultural exports almost offset the cost of imports from OPEC nations, which amounted to $49 billion and a negative $28 billion balance of payments.

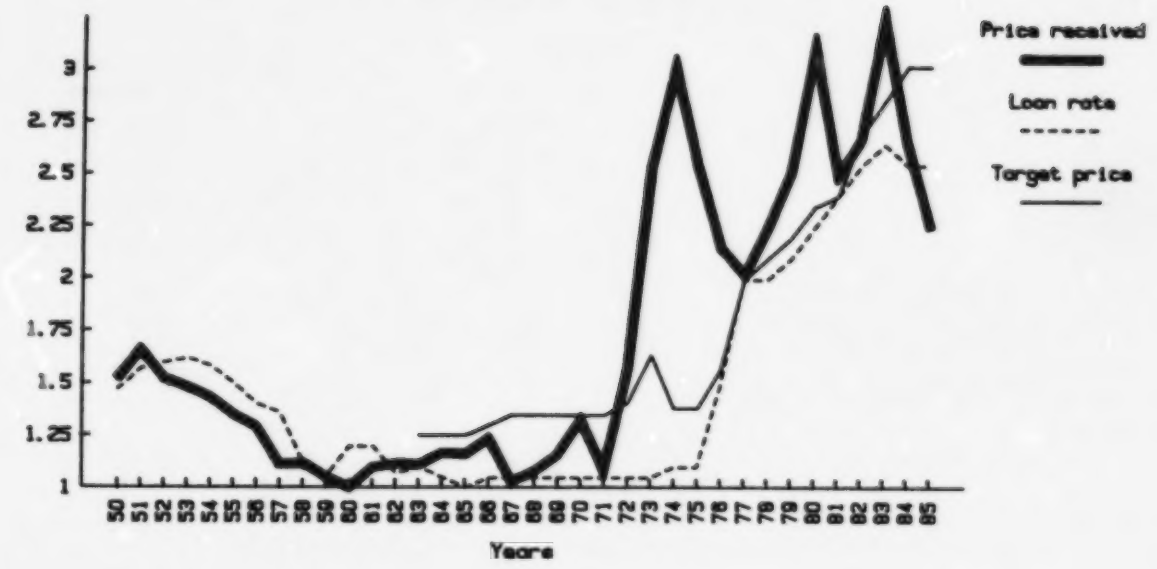
U.S. WHEAT
CROP YEARS 1950-1985
(Dollars per bushel)



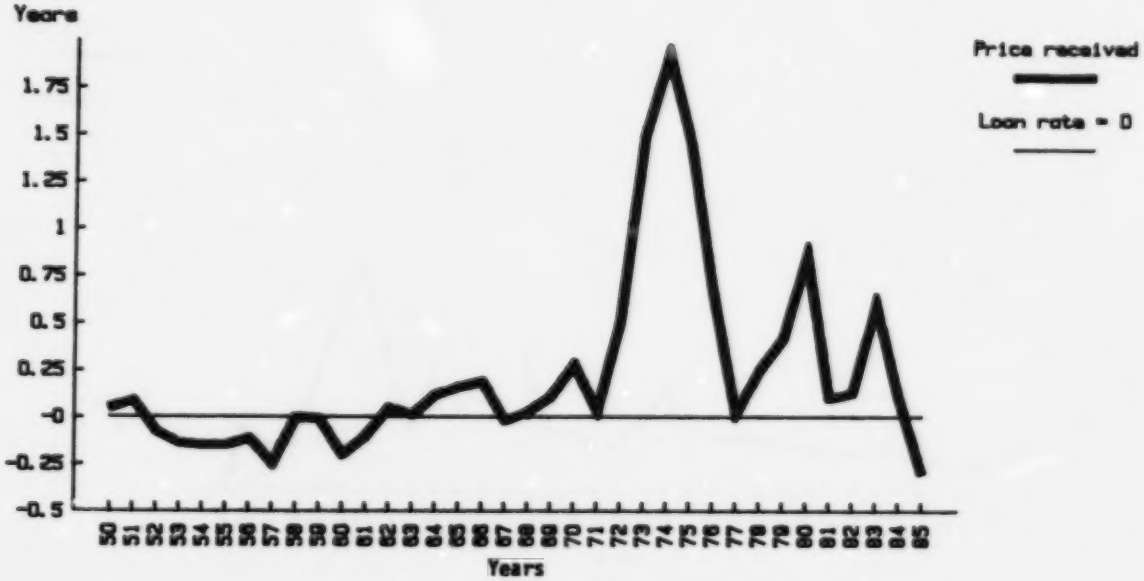
Target prices 1950-1973 not available



U.S. CORN
CROP YEARS 1950-1985
(Dollars per bushel)



Target prices 1950-1982 not available



> The U.S. farmer is the most productive food producer in the world, in terms of both quantity and quality. This efficiency in food production is complemented by the provision of the most modern, versatile and effective food marketing and distribution system. Perhaps the most tragic circumstance of the last 25 years is that U.S. farm policy, particularly its emphasis on maintaining world price supports above potentially market-clearing prices has, in effect, protected world farmers and their governments from feeling the full clout of our competitiveness.[18]

For grain, the whole issue of U.S. price supports keeping prices above market clearing levels is the central focus of the 1985 Farm Bill. Too often, it is felt, U.S. prices have been kept artificially high while other exporters are selling just below U.S. levels. Indeed, except in years of unexpected new demand or lower than planned output, world grain prices tend to trade close to U.S. loan rates. During the strong markets of the 1970's this fact was often forgotten. This influence can be seen if one analyses wheat and corn market prices during the last 35 years. Throughout the 1950's grain markets were very weak, global prices were dropping and the U.S. loan rate was systematically reduced. During virtually all of this period U.S. loan rates were above market clearing levels.

The situation stabilized during the 1960's and into 1972, helped greatly by U.S. production restrictions. In the 1970's strong global market conditions first pulled market prices and then U.S. price supports up to higher levels. By 1977 these price supports were sufficiently attractive that surplus global grain supplies once again became a problem. Eventually, in order to dispose of extremely burdensome supplies, the PIK program was put in place in 1983. Although the U.S. drought of 1983 led to fairly strong feed grain market conditions during the 1983-84 crop year, wheat market supplies remained burdensome. By the time the 1984 crops were in, both wheat and feed grain prices were back to U.S. price support levels. The global market continued to weaken and once again the U.S. finds itself with grain priced above world market clearing levels.

For the 1985-86 crop year, the situation has continued to deteriorate. Wheat and coarse grain prices have dropped below the 1985 loan levels and yet export demand has continued

to stagnate. The quantity of corn alone that could enter the U.S. loan program could easily exceed total 1985 Canadian grain production. There can be no doubt that the new policy for the rest of this decade will allow for significant declines in U.S. grain price supports. Given the trade outlook described in part one of this section and the production trends noted in part three, the most likely grain price trend in the next few years will be one of lower prices.

3. Global Production Trends

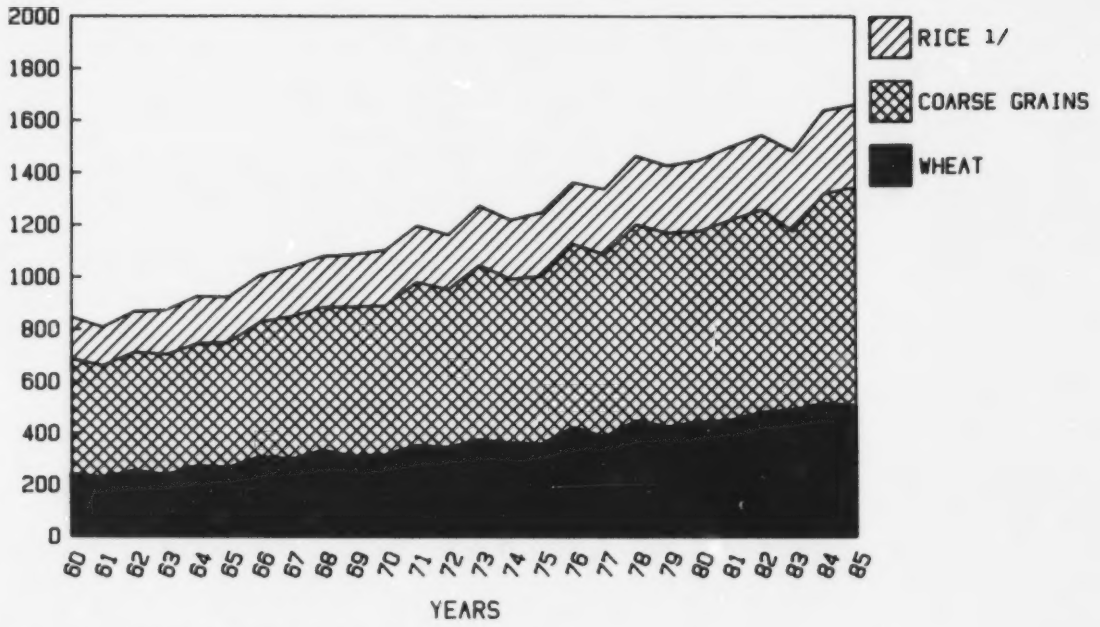
In 1957, the Subcommittee on Agricultural Policy of the Joint Economic Committee of the Congress of the United States conducted a study entitled "Policy for Commercial Agriculture." The Subcommittee concluded:

> If not corrected, the failure of demand for farm products to expand as rapidly as farm productivity, together with other factors, is likely to exert strong pressures toward persistent surpluses of farm products, fewer opportunities in farming, a need for important adjustments in individual farm operations, and generally not favorable income in commercial agriculture.[19]

That prediction became a reality. Surpluses were chronic during the 1960's and the prime grain market concern in the early 1970's was how to restrict output. The entry of the Soviet Union into the market in 1972 temporarily boosted prices and profitable production opportunities were widespread over the next few years. However, in real terms the prices of many commodities peaked in 1974. By 1976 it was evident that grain market surpluses were returning. Grain production restrictions were reintroduced in the United States for 1977 crops. Since then in most years the U.S. grain policy has been the major factor supporting market prices.

Farm productivity increases were a concern in 1957. Almost 30 years later a look back will show continued increases in productivity since that time. The "green revolution" that had been promised in the early 1960's was not a media success and by the late 1960's many were critical of the program. Although the program did not receive media acclaim, it definitely was a success on Third World farms, especially in locations such as India and Brazil. The potential for the development and adoption of new technologies has probably never been greater for many regions of the world.

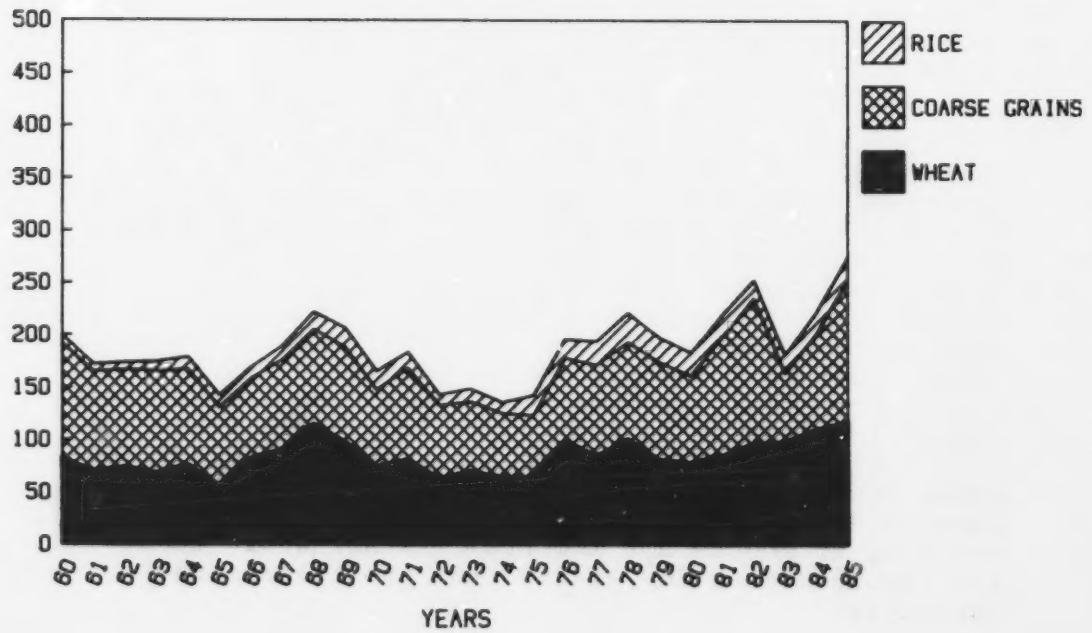
WORLD GRAIN PRODUCTION
(million metric tons)



1/ Production is expressed on milled basis.

1984 Preliminary, 1985 Projection.

WORLD GRAIN STOCKS
(million metric tons)



1984 Preliminary, 1985 Projection.

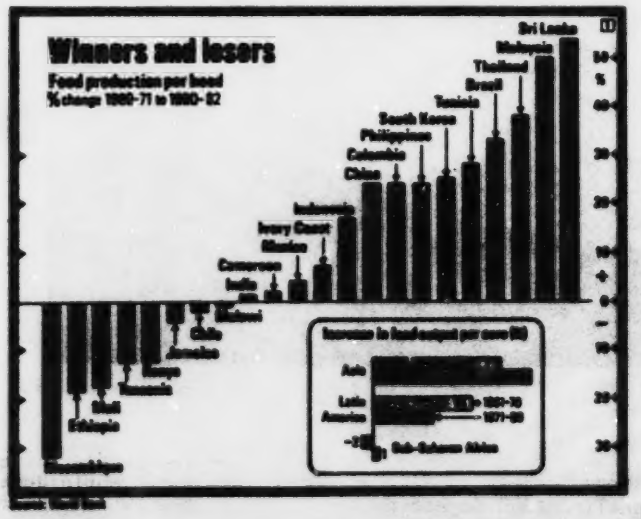
> Several factors point to the potential for rapid adoption of technological products around the world. Many agricultural input suppliers, such as the newer biotechnology companies and seed companies, are international in scope and have a vested interest in the use of their products. Agricultural producers may have to take advantage of technology to remain competitive in world markets, and producers are expected to increasingly have computers available to analyse technological and other impacts on commodity supplies and markets.
>
> More specifically on technological advances, plant breeding, genetic engineering, and increased use of plant growth regulators are expected to produce higher yielding crops. Recombinant DNA (gene splicing) and plant tissue culture are expected to speed development of superior plant varieties.
>
> In the area of genetic engineering and conventional plant breeding, crops likely will have increased resistance to disease, insects, and nematodes. Variation in temperature, water availability, and competition from weeds will have less effect on new, more resistant varieties of tree crops, potatoes, soybeans, corn, and grain sorghum.[20]

Although the grain production increases within the European Community were policy induced, the developments that have transpired there over the last 25 years may be indicative of potential trends elsewhere. Those Western European nations not in the EC, for example, have been reducing their net import position in recent years. Two of the largest importers, Spain and Portugal, will also be entering the EC in 1986. Eastern European imports were cut sharply during the early 1980's, mainly for credit reasons. However, even a relatively modest improvement in farm technology could transform this region into a grain surplus area. Those surpluses could be exported out of the communinst bloc to earn foreign exchange or to other deficit nations within the bloc to reduce net imports. Either would reduce the import demand for grains from the traditional exporters.

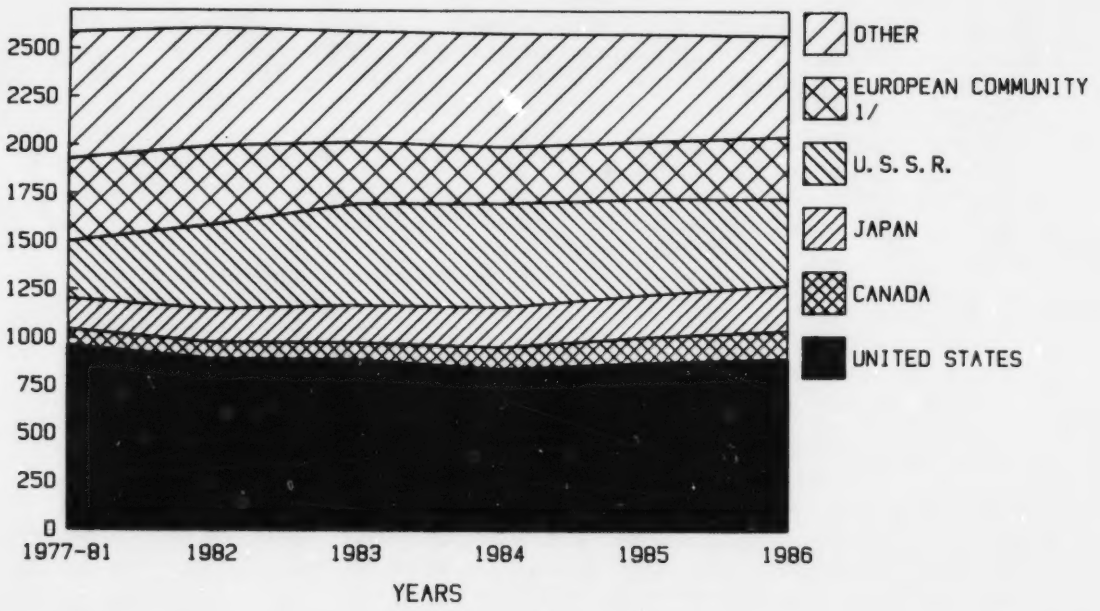
Both India and the People's Republic of China have managed to wean themselves from a dependency on imported grains in recent years. Whether these nations become regular grain exporters in the years ahead depends on a wide range of factors. U.S. grain price support policies will tend to set benchmark global levels and domestic price levels will be heavily influenced by each nations internal price policies. The relationship between the world market price and the domestic price did not discourage the PRC from exporting corn in 1985, but market conditions did restrict Indian wheat exports. These two nations have removed themselves from the list of steady net importers, but it remains to be seen as to whether they will regularly export. Foreign exchange reasons alone could stimulate exports. In the meantime, by achieving self-sufficiency they have removed one-half of the global population from the import market.

For other developing nations, goals of increased self-sufficiency can have a very significant impact to net world import demand for grain. As the technological gains are spread throughout the Third World, many countries will be given the capacity to feed themselves. For many nations even today lack of grain self-sufficiency is due more to political or military factors than to agricultural ones.

> Thus, the outlook for the rest of the 1980's is for a continuing imbalance of global agricultural production in relation to demand. For the United States, this suggests increased competition from other countries for slowly growing world markets, accumulation of surplus world stocks in the United States, and continued pressures on U.S. farm prices and incomes.[21]

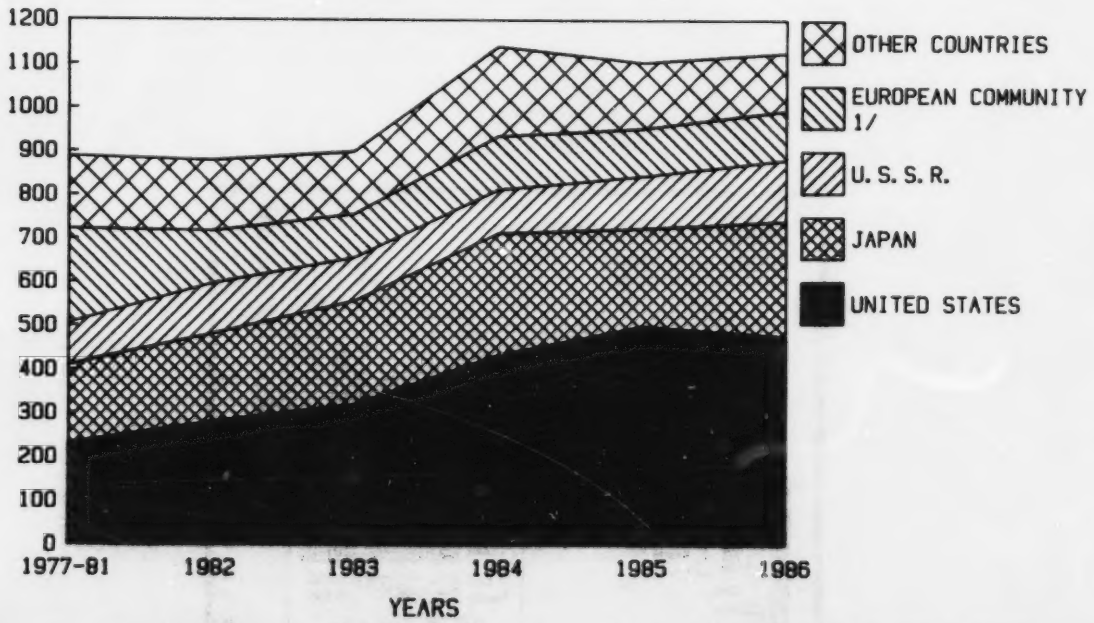


BEEF AND VEAL : IMPORTS *
(1,000 metric tons)



1/ excluding INTRA-EC trade
1977-81 average, 1985 prelim, 1986 forecast

PORK: IMPORTS
(1,000 metric tons)



1/ excluding INTRA-EC trade
1977-81 average, 1985 prelim, 1986 forecast

* Import Statistics do not reflect total World demand. Export Statistics are more representative.

The speed with which the PRC was able to gear up its grain production in recent years must be kept in mind for any analysis of Soviet grain output outlook. Soviet agricutural policies have been generally successful in recent years as Soviet food output has increased. Meat production records have been consistently set in recent years and a record forage crop was produced in 1985. Grain yields were relatively good in 1985 but lower acreage apparently kept output below 200 million tonnes. Some monetary incentives have recently been introduced into the Soviet agricultural system. If sharply higher grain production is a priority it could be achieved. As stated in part one of this section, Soviet grain production in the last half of the 1980's could very likely be as much of a success story as the output record of the first half of the 1980's has been a disappointment.

B. WORLD LIVESTOCK MARKETS

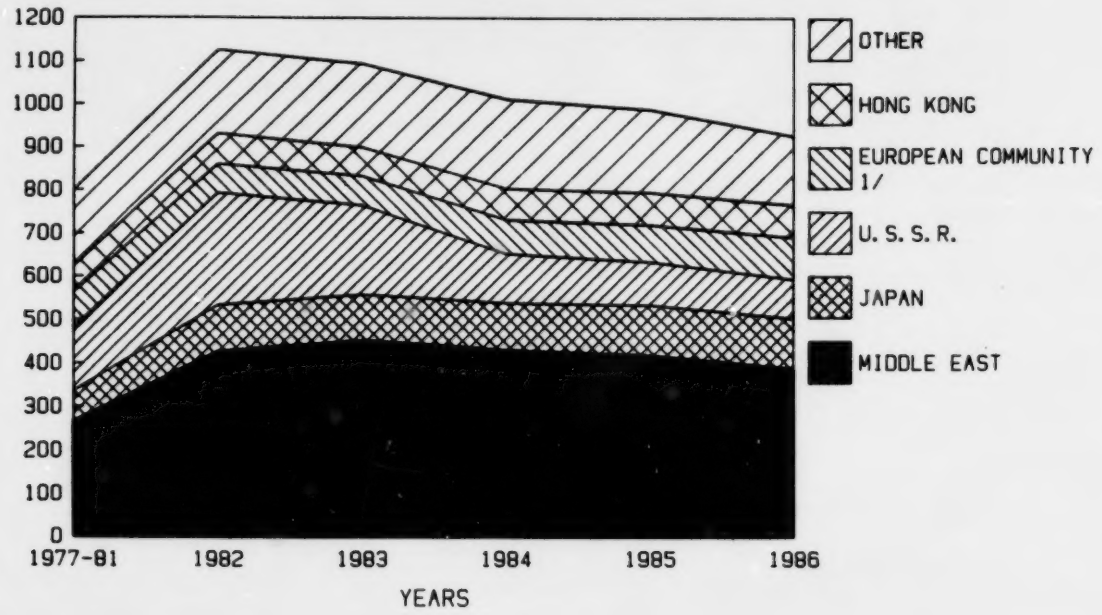
1. Global Trade

a) General

Over the last decade world meat exports (beef, pork, and poultry) have stayed near to 6 percent of total production. Total production of these meats (plus lamb, mutton and goat) has risen 25 percent during this period, from approximately 100 million tonnes in 1976 to about 125 million projected for 1986. Exports were strongest from 1979 through 1981. From 1981 through 1984 world trade levels were relatively stagnant. Slight increases in trade levels occurred in 1985 and this higher level is expected to be maintained in 1986. This recent increase can be attributed to surplus meat disposal policies by some nations rather than any significant upturn in world market demand. World meat markets are currently facing a situation of serious oversupply.

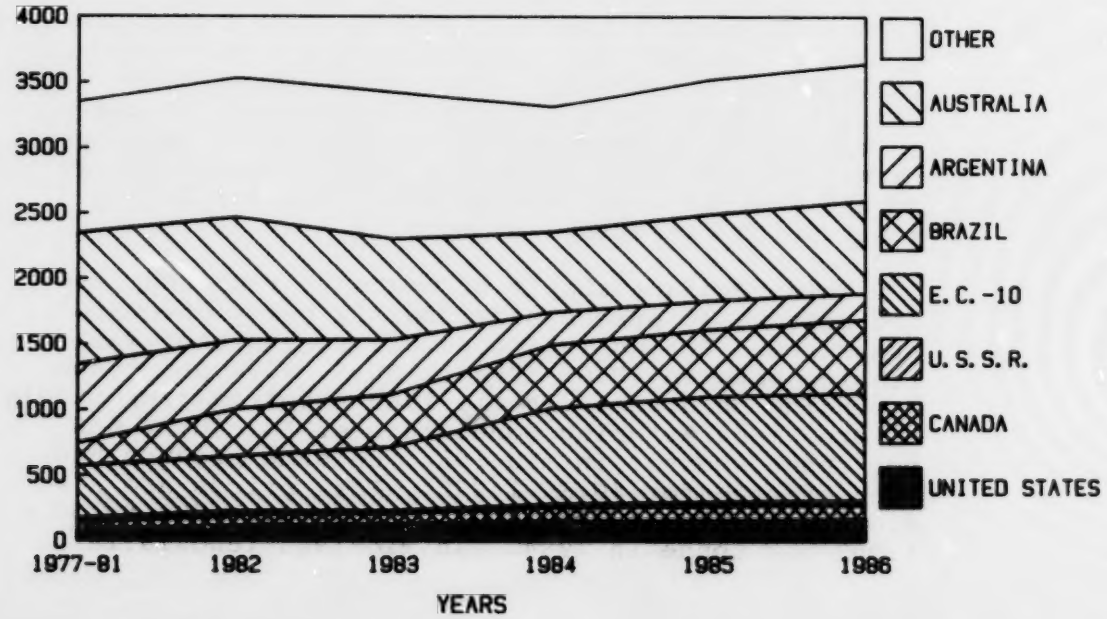
This abundant supply of meats in 1985 and 1986 has kept world prices under fairly heavy downward pressures. During 1984 boneless frozen beef was trading between $U.S. 1000 to $U.S. 2000 per tonne, depending on grade. In mid-1985 Argentina reportedly offered manufacturing boneless beef for $U.S. 650 per tonne whereas in mid-1984 the same product had been offered for $U.S. 1,275. Pork prices are also dropping, after averaging around $U.S. 1,700 to $U.S. 1,900 per tonne in 1984. In mid-1985 Yugoslavia

POULTRY: IMPORTS*
(1,000 metric tons)



1/ excluding INTRA-EC trade
1977-81 average, 1985 prelim, 1986 forecast

BEEF AND VEAL : EXPORTS
(1,000 metric tons)



1/ excluding INTRA-EC trade
1977-81 average, 1985 prelim, 1986 forecast

* Import Statistics do not reflect total World demand. Export Statistics are more representative.

reportedly sold pork to Western Europe at $U.S. 500 per tonne. Brazil, after selling poultry at $U.S. 940 per tonne in 1984, was asking $U.S. 880 per tonne in mid-1985. With increasing amounts of meat entering the world markets in 1985 and 1986, prices on all meat products will remain under downward pressure at least through 1986.

b) Beef

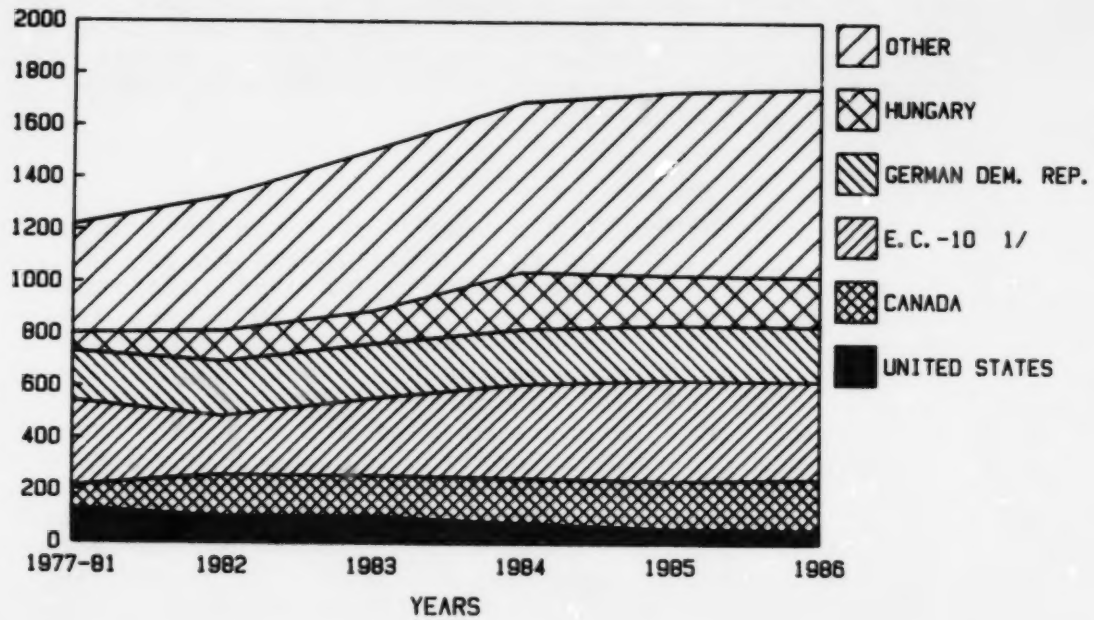
The tone of the world beef market has been directly set by the policies of the European Community. EC beef inventories at the beginning of 1985 totalled some 975,000 tonnes and by the end of 1986 the total exceeded 1 million tonnes. Beef and veal exports from the EC are placed at roughly 800 thousand tonnes in both 1985 and 1986, which represents almost 23 percent of global exports of beef and veal. Argentine exports are expected to continue the decline of recent years dropping to 220 thousand tonnes in 1985 and 200 thousand in 1986. Exports from Brazil will replace this decline, rising to 510 thousand tonnes in 1985 and 560 thousand in 1986. Australia, the other big exporter, is projected to export 660 thousand tonnes in 1985 and 710 thousand in 1986.

As EC beef surpluses represent some 30 percent of annual world exports, it will be quite some time before world prices can recover. In 1984 and 1985 the EC attempted to target most of the surplus sales into North Africa and the Middle East. However, export restitutions for the Far East, estimated at $U.S. 740 per tonne, were implemented in mid-1985. To the extent that this world beef glut is allowed to overflow into the North American market, a lid will be kept on prices. U.S. beef exports have been rising in recent years, but their off-shore component is mainly high quality beef to Japan. South Korea's increased beef and pork production is expected to reduce their beef import levels in both 1985 and 1986.

c) Pork

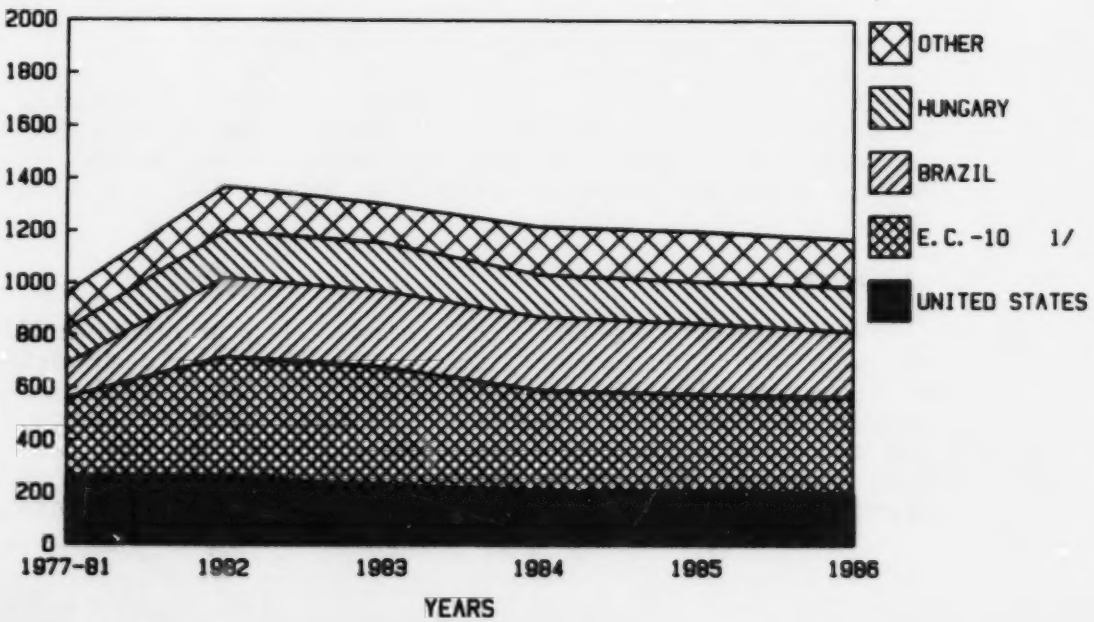
The People's Republic of China, with hog inventories of over 300 million head, is the largest world exporter of live hogs (mainly to Hong Kong) and the fourth largest global pork exporter. To date most of these hog and pork shipments have been directed ot the Hong Kong and Singapore markets. The largest pork exporting region is Eastern Europe, with 1985 exports

PORK: EXPORTS
(1,000 metric tons)



1/ excluding INTRA-EC trade
1977-81 average, 1985 prelim, 1986 forecast

POULTRY: EXPORTS
(1,000 metric tons)



1/ excluding INTRA-EC trade
1977-81 average, 1985 prelim, 1986 forecast

of 210 thousand tonnes from the German Democratic Republic, 220 thousand from Hungary and 90 thousand tonnes from Romania. Exports out of the European Community are projected to total 390 thousand tonnes in 1985.

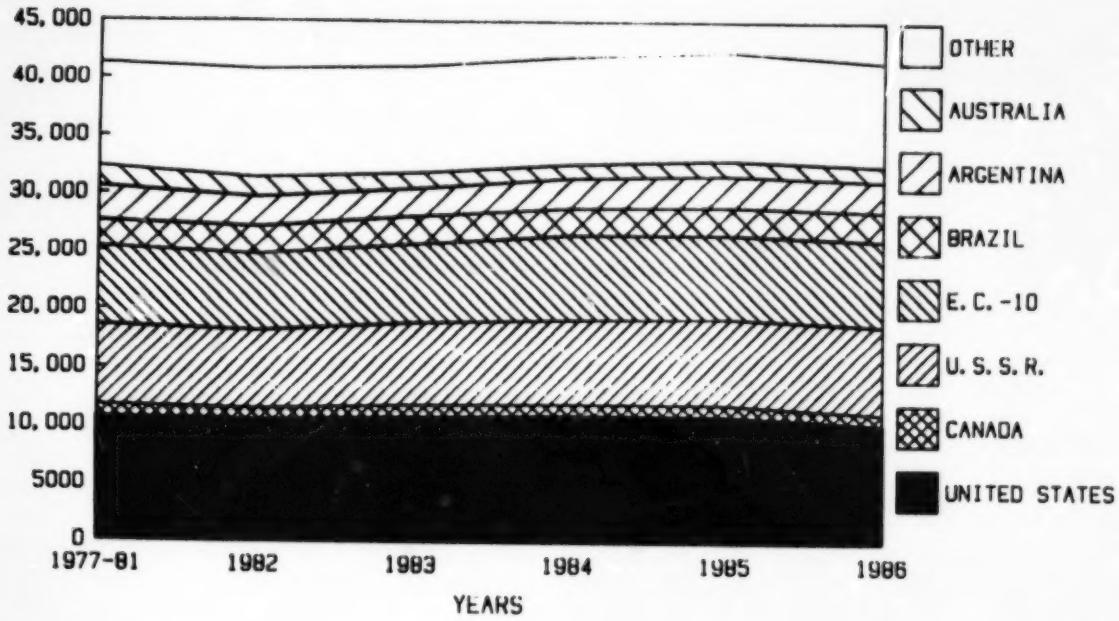
The largest importer is the United States with roughly 500 thousand tonnes in 1985, followed by Japan with 225 thousand. The Soviet Union is also expected to import 120 thousand tonnes. With a world output of over 50 million tonnes, pork exports of under 2 million tonnes has meant that only around 3 percent of world pork output is traded internationally. As the United States is the largest importer, given the recent actions of the U.S. hog industry some reduction in world import demand for pork could very easily develop in the period ahead. This could occur either through increased U.S. output meeting most U.S. needs, or through U.S. import restrictions on hogs and pork, or, both. As the People's Republic of China is the largest hog producing nation in the world, output increases in that nation could be partially directed into the world markets. A natural target nation would be Japan.

d) Poultry

World poultry trade grew steadily throughout the 1970's and into the 1980's, before peaking in 1982. Since then trade levels have dropped sharply as the major importers in the Middle East and the Soviet Union increased domestic production to fill their market needs. Soviet poultry imports peaked at 260 thousand tonnes in 1982 and have subsequently fallen steadily to an estimate of only 90 thousand tonnes in 1986. For Saudi Arabia, imports peaked at 227 thousand tonnes in 1983 and 1986 imports are projected to drop to 160 thousand tonnes. The four largest Middle East importers have dropped from total imports of 453 thousand tonnes in 1983 to 388 thousand expected in 1986. Total poultry exports have dropped from 1.37 million tonnes in 1982 (excluding intra-EC trade) to approximately 1.17 million tonnes expected in 1986.

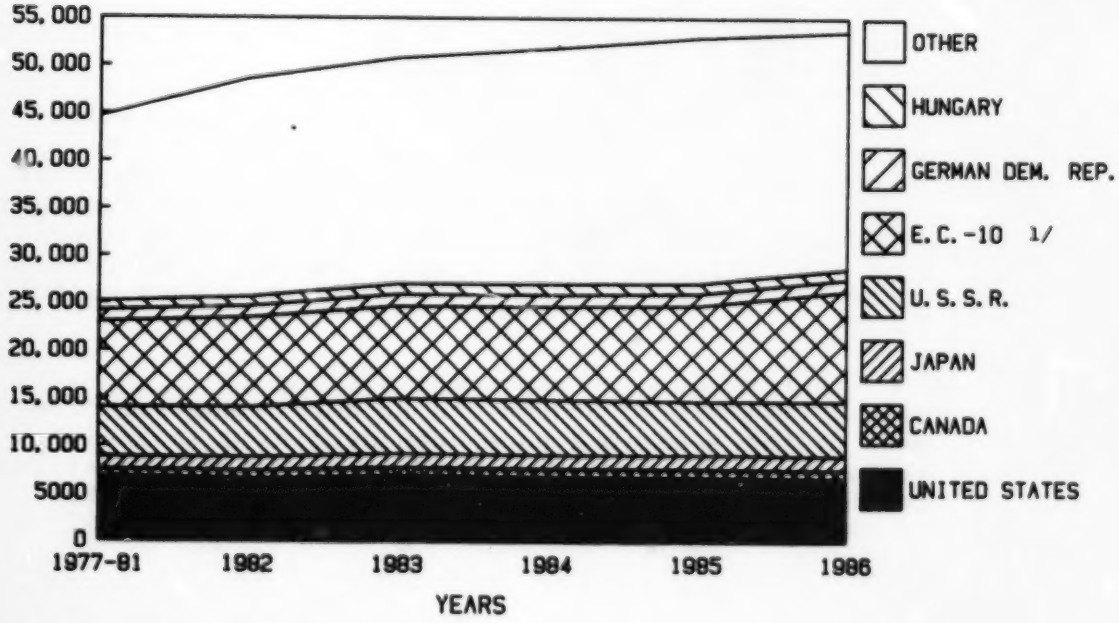
The four primary exporting nations are France, Brazil, the United States and Hungary. Exports from each of these nations have been declining steadily in recent years and this trend is expected to continue in the period ahead. Although the current markets in Asia are expected to be maintained, both the Middle

BEEF AND VEAL : PRODUCTION
(1,000 metric tons)



1977-81 average, 1985 prelim, 1986 forecast

PORK: PRODUCTION
(1,000 metric tons)



1/ excluding INTRA-EC trade
1977-81 average, 1985 prelim, 1986 forecast

East and the Soviet import demand are expected to continue to shrink. Strong domestic demand has to date prevented the export market shrinkage from adversely affecting the poultry industry. However, it does appear that most of the poultry market potential will need to be realized in the domestic markets rather than by exports. As a sign of the times, chicken nuggets are very popular in Japan. This is the world's largest chicken parts market, but with rising Japanese poultry output and shrinking world trade this market is facing very strong competition amongst the exporting nations.

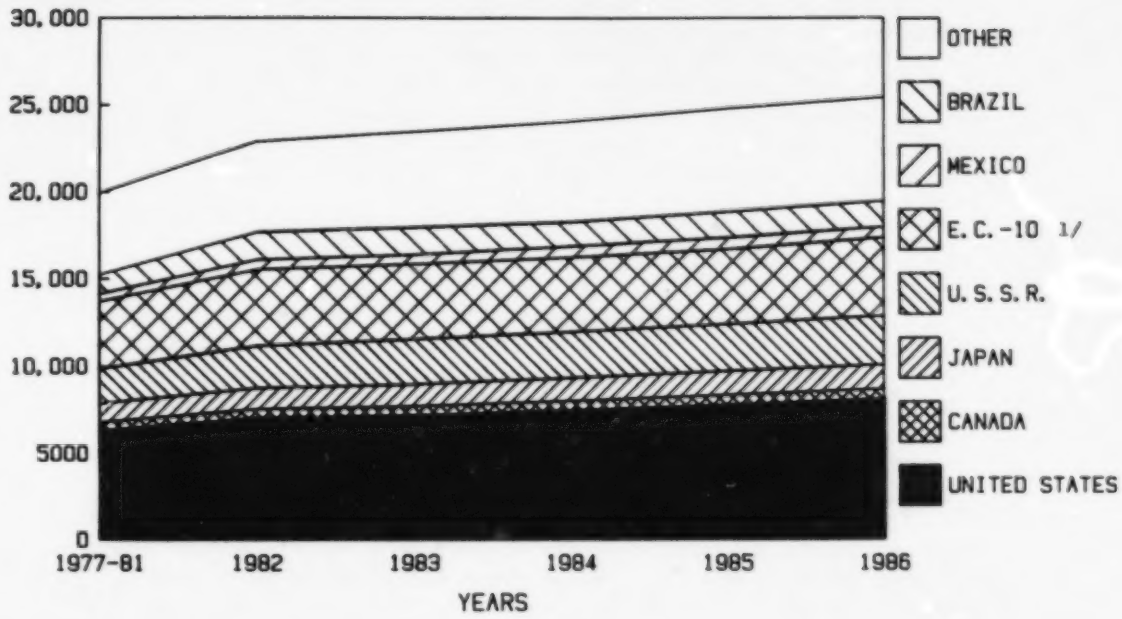
b) Global Production

Although world beef, pork, and poultry production have all been increasing in recent years, market conditions for beef and pork have not been all that strong. For beef, the large output increase has been in the Soviet Union, where output has risen from 6.62 million tonnes in 1982 to an expected 7.5 million in 1986. This would put the Soviet Union second in world beef output. The United States is first with 10.2 million tonnes projected for 1986 and the EC is third with an expected 1986 output of 7.45 million. Total world beef production in 1986 is placed at 41.5 million tonnes, up from the levels of the early 1980's but below the highs of the last half of the 1970's.

For pork, the People's Republic of China has raised output from 10 million tonnes in 1979 to 16 million tonnes in 1986. The European Community is the second largest global producer and output there is projected to increase to 11.6 million tonnes in 1986 from an average of 8.9 million in the 1977-81 period. Output in the United States, the third largest producer, has been shrinking during the 1980's and is estimated at 6.6 million in 1986. The number four producer, the Soviet Union, has raised output from the 1977-81 average of 5.2 million to an expected output of 5.75 million tonnes in 1986. Thus three of the four largest producers have been steadily expanding output this decade. This trend is expected to continue in both the PRC and the Soviet Union in the years ahead.

For poultry, output has increased in all major markets. Consumer demand has remained very strong and this increased output has generally been sold at profitable levels. This contrasts with the red

POULTRY: PRODUCTION
(1,000 metric tons)



1/ excluding INTRA-EC trade
1977-81 average, 1985 prelim, 1986 forecast

meat sector, where losses have been widespread through much of this decade. The United States is the largest poultry producer, with 8.1 million tonnes expected in 1986. The EC is next with 4.5 million tonnes, followed by the Soviet Union with 2.8 million. Total global poultry output in 1986 is projected at 25.4 million tonnes, compared with a 1977-81 annual average of 19.9 million.

For the meats in general, so far this decade poultry output increases have taken market share from beef and pork. This is expected to continue throughout the rest of the decade. Increased domestic production in many importing nations will keep export market conditions very, very competitive. As more North American grain is expected to stay at home, U.S. producers will be sorely tempted to market that grain as meat. As the U.S. is the largest global meat importer, this further dampens the world meat trade outlook.

III. CANADA-U.S. AGRICULTURAL ENVIRONMENT

A. GENERAL FARM CONDITIONS

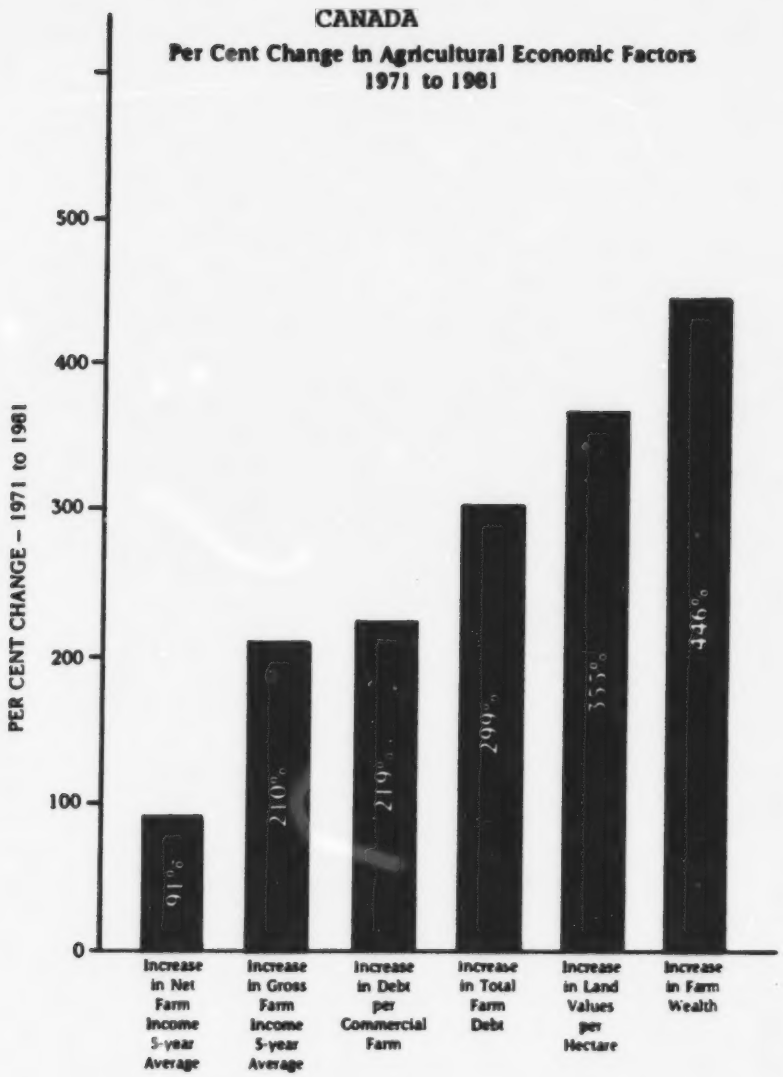
1. Financial Stress

The problems of agriculture today, judging with the clarity of hindsight, have deep roots in the excesses of farmers and their lenders that were created by the inflationary environment of the 1970's. In that unusually prosperous era, farmers production and investment decisions were often made, and willingly financed by creditors, on the assumption that inflation would continue and that export markets for grains, oilseeds, and meat would continue to grow at the phenomenal annual rates of the 1970's.

> With the swelling optimism created by inflation in that decade, bidding on farmland became very aggressive and was virtually unaffected by the rapidly rising interest rates in the late 1970's. In the 12 years leading up to the 1981 peak, farmland values rose at a compound annual rate of 12 percent. Since real estate accounted for roughly three-fourths of all farm sector assets, the surge in land values generated huge equity gains for farmers and other land owners.
>
> Fortified by growth both in earnings and equity that outstripped inflation, farmers invested more freely in machinery and equipment, buildings and structures, and in land improvements such as irrigation, land clearing, tiling, and terracing in the 1970's. Lulled by the same security, lenders were willing to finance a growing proportion of the increased farm operating expenses, farmland purchases, and capital investments. As a result, farm debt also grew very rapidly in the 1970's, virtually matching the three-fold increase in farm asset values.[22]

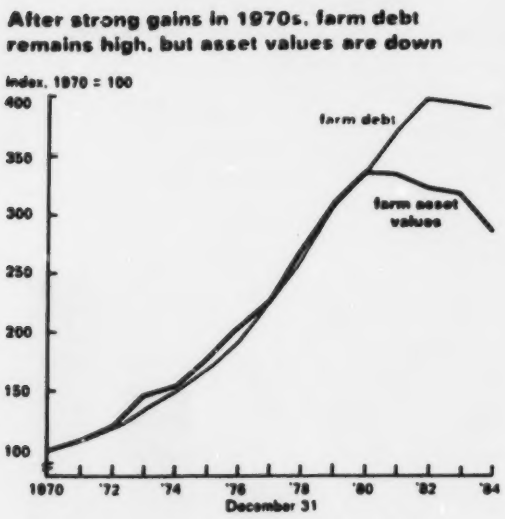
Unfortunately, the realities of the 1980's have not matched the expectations of the 1970's that had been held by so many. Grain export markets have become extremely competitive and growth in domestic per capita meat consumption has been largely in poultry to the detriment of the red meat sector. Slow economic growth in many regions of the world, expanded agricultural production abroad, and debt service difficulties have all contributed to the slowdown. Other non-agricultural factors have also had significant impacts on the farm sector.

> The unexpected realities of the 1980's encompass far more than just internal changes in agricultural markets. In particular, an unbalanced mix of a tight monetary policy and a stimulative fiscal policy since 1979 contributed significantly to the changing realities for agriculture in the 1980's. So too did the stepped-up moves toward financial market deregulation. These factors dramatically altered trade patterns in world markets by contributing to the turnaround from the downtrending value of the dollar in the 1970's to the uptrending dollar so far this decade. These factors also contributed significantly to a surge in inflation-adjusted interest rates and an altering of terms on farm loans. Maturities on farm loans became shorter. The use of fixed-rate loans diminished as lenders moved toward variable-rate farm loans and/or more frequent rate renegotiations. The changing terms of farm loans, in the face of very high interest rates so far this decade, added considerably to the cash outflows of many farmers. Indeed, to an unknown extent, the financial stress among many farmers today reflects their being saddled with annual debt service requirements that could have been considered at best only a remote possibility when the debt contracts were negotiated in the 1970's.[23]



During the 1970's and into the early 1980's many financial mistakes made by producers were hidden by rising farm asset values. The equity gains which resulted from surging land values resulted in very healthy balance sheets that could be easily borrrowed against. In fact, as the financial system had a surplus of loanable funds, producers were strongly enticed to expand by lenders trying to dispose of surplus funds. As long as farm asset values surged higher, the rising farm debt load did not appear to be a burden.

United States



However, when grain and livestock market conditions began to visibly deteriorate in the early 1980's, farm asset value peaked. The subsequent decline in farm asset values adds significantly to the financial stress in agriculture, as total equity in the farm system is reduced.

> At a minimum, this erosion in farm sector equity has undermined the credit-worthiness of agriculture. Moreover, for highly leveraged farmers who are simultaneously faced with cash-flow shortages, the erosion in equity has undermined the value of the collateral that secures their debts and has accelerated the small, but growing, number of farmers headed toward technical insolvency. Because these farmers owe a proportionately large share of the outstanding farm debt, the stress in agriculture extends deeply into farm lenders.[24]

In the 1970's world markets for both grain and livestock expanded. This led many forecasters to predict that this expansion would continue in the 1980's. A deductive approach to the issue coupled with an excessive dependence on econometric analysis resulted in this

consensus opinion. In addition, it is one of the easiest outlooks to sell. If petroleum prices were $2 per barrel in 1972, $10 in 1974, $18 by 1979 and $25 per barrel in 1980, then it is very easy to convince people that it will be over $U.S. 50 per barrel by 1985 and exceed $U.S. 100 by 1990.

As grain exports and grain prices expanded sharply in the 1970's, price increases were projected to continue in the 1980's and export market demand was expected to continually grow. From the supply side of the market, the reaction by producing nations has been sufficient to meet these growing market needs. Unfortunately the demand side has not. Instead, more and more, those regions that had been importing are increasing their own domestic output. In some cases, old importers are becoming new exporters. As a result, since the beginning of the 1980's grain has begun to back up in North America.

Livestock has been one of the traditional channels for surplus grain. In recent years livestock exports have been promoted as a route to market surplus grain. However, the largest world importer of meat, the United States, also has the greatest overcapacity in grain production. Increased meat exports to the United States would not be warmly received. In fact, if the U.S. producers decide to transform more of their own grain into meat, the world meat import demand potential will decrease.

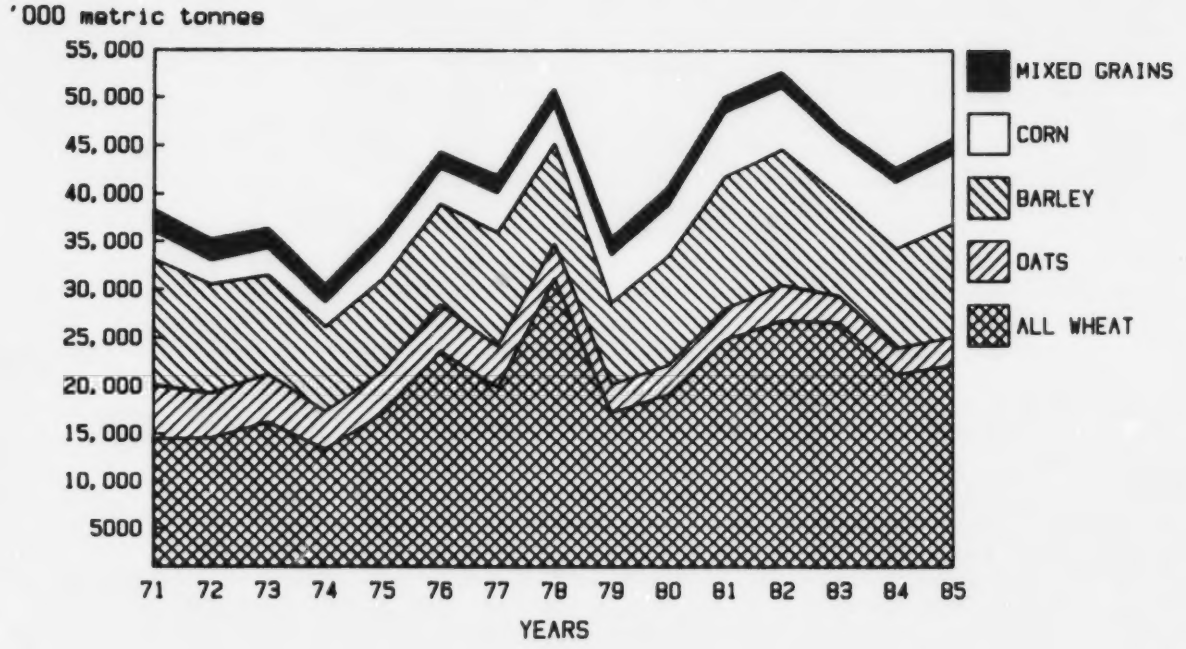
An inductive analysis of the export market potention for North American grain and livestock products indicates many constraints. In fact, it appears likely that a shrinkage of market opportunities is highly possible. This means that grain and livestock output will need to be more geared to domestic needs. Those export markets that currently exist will need to be examined for future potential, and other markets will have to be sought out. But until these markets have been verified, it is very dangerous to assume their existence. That is what created the current difficulties.

2. Grain Output Trends

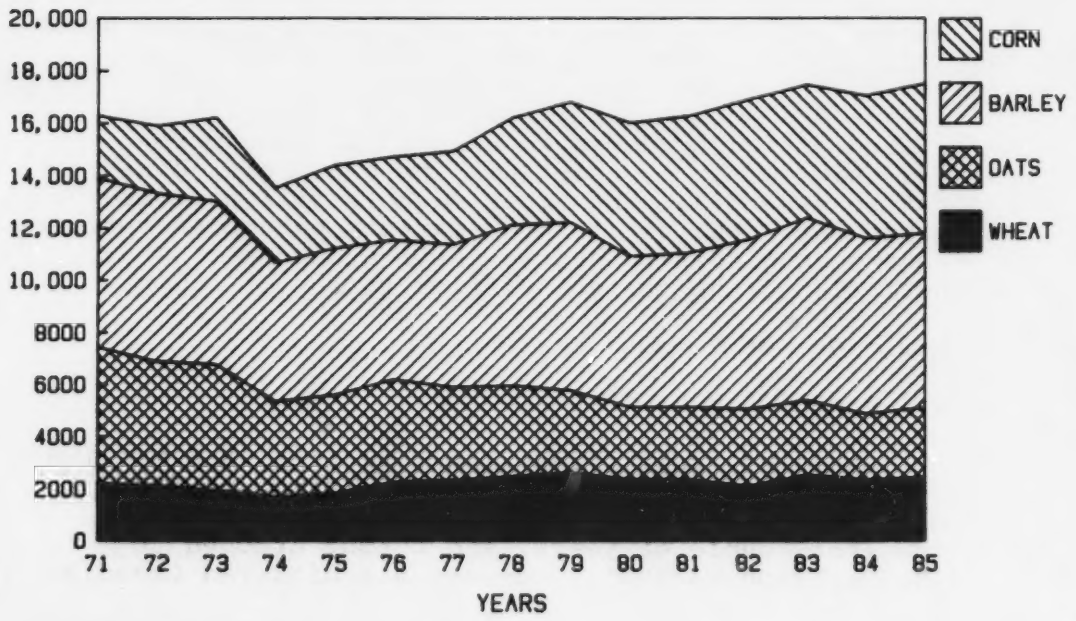
a) Canada

Canadian grain production rose from 38.3 million tonnes in 1971 to a peak of 52.5 million in 1982. Production difficulties have been experienced in the last couple of years, and output dropped to 45.6 million in 1985. Constraints hindered Canadian

CANADIAN GRAIN PRODUCTION



DOMESTIC FEED CONSUMPTION OF CANADIAN GRAIN ('000 tonnes)



Note: This is derived residually and includes waste and dockage.

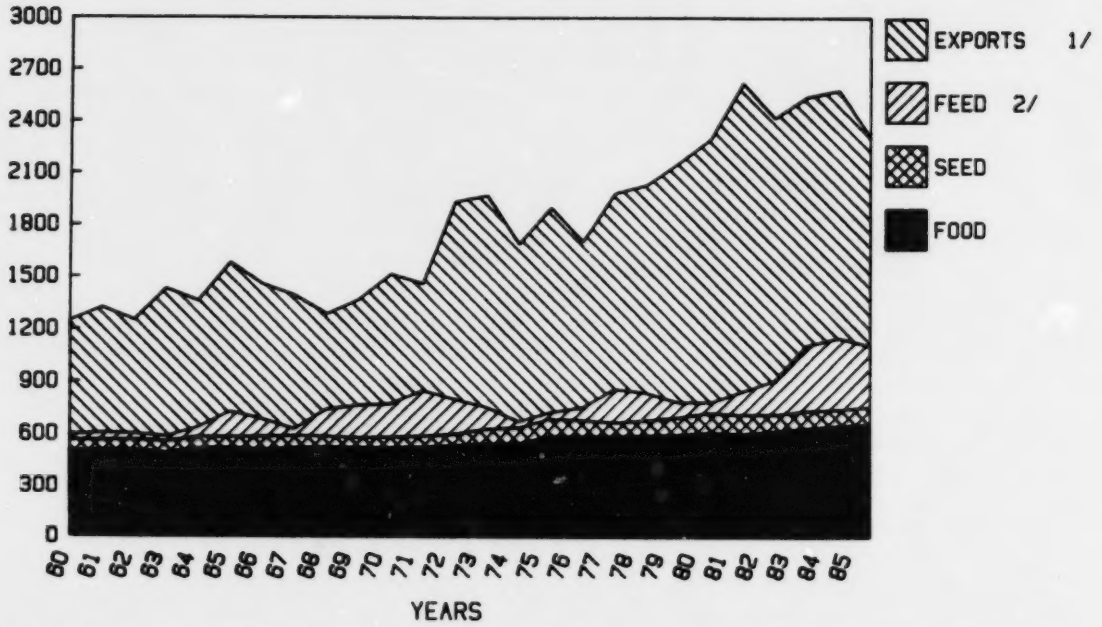
output during the 1970's as rail capacity was insufficient to handle all the exportable supplies. This question was addressed in the late 1970's and grain export capacity has been increased since that time.

As export market opportunities opened up, Canadian wheat production has expanded significantly over the past 15 years. A record crop of 31.1 million tonnes was harvested in 1978 and annual output averaged more than 25 million tonnes during the 1981-83 period. Barley production has remained fairly constant throughout the whole period, ranging from a high of 14.1 million tonnes in 1982 to a low of 8.8 million in 1974. Oats production has declined steadily from a 1971 high of 5.6 million to a 1984 low of 2.7 million. Mixed grains has also followed the same trend. In percentage terms the largest increase has occurred with corn, with domestic output rising from 2.9 million tonnes in 1971 to 7.3 million in 1985, an increase of 152 percent.

In 1971, Canadian corn output represented 7.7 percent of Canadian grain output. In 1985, it rose to 16 percent. The impact on the domestic market has been considerably greater, however, as most of the corn produced in Canada is consumed domestically as feed, while some of the barley and most of the wheat is used either for food or export. Feed use of grain (Feed, Waste, and Dockage) in Canada for 1984-85 has been calculated at the following levels, in million tonnes: Wheat, 2.12; Oats, 3.37; Barley, 6.73; Corn, 5.44. Thus corn now accounts for some 30 percent of domestic feed use.

The increase in feed grain production in Eastern Canada has been the most significant development in the domestic feed grain market over the past 15 years. In 1971, the Prairies was the only surplus feed grain region in Canada. Up until 1973 the CWB was the sole seller of domestic feed grains to the East and these sales were made in competition with U.S. corn values landed in Montreal. As the 1970's progressed, Ontario moved from a grain deficit to a grain surplus region. In the late 1970's and to date in the 1980's Quebec continued this trend, as the North American corn belt continued to move north and east.

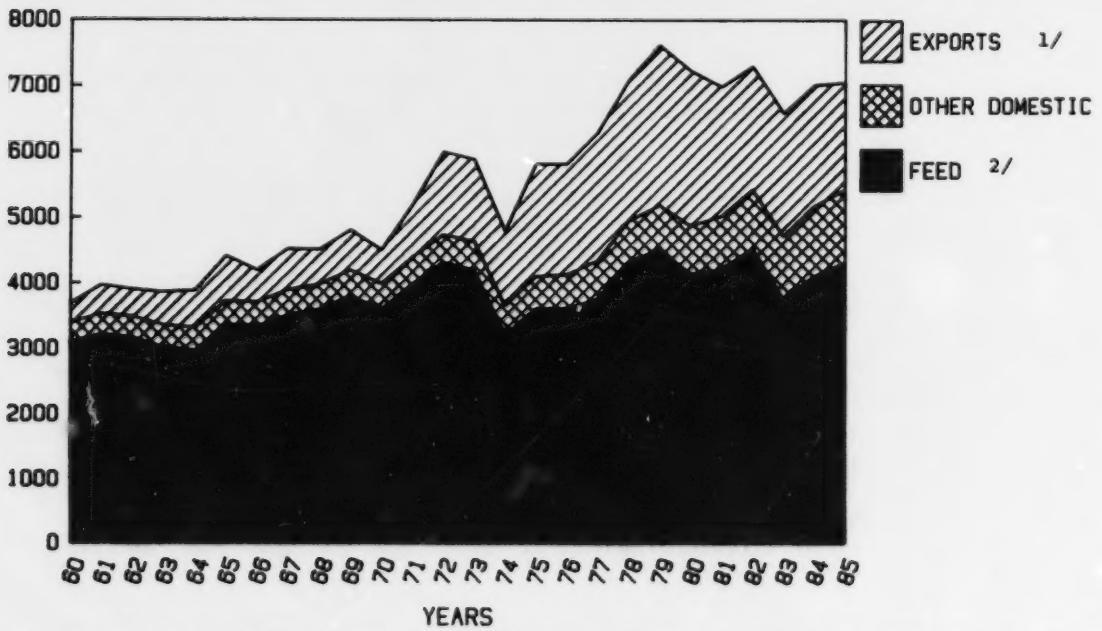
U. S. WHEAT USAGE
(million bushels)



1/ Imports and exports include flour and other products expressed in wheat equivalent.

2/ Residual; approximates feed use and includes negligible quantities used for distilled spirits.

U. S. CORN USAGE
(million bushels)



1/ Imports and exports include flour and other products expressed in wheat equivalent.

2/ Residual; approximates feed use and includes negligible quantities used for distilled spirits.

b) United States

When global import demand jumped higher in the 1970's, the United States was the seller best positioned to capture this new market demand. U.S. grain surplus stocks were high and additional productive capacity had been idled. Although some transportation bottlenecks did develop in the mid-1970's, these were cleared up by the end of the decade. U.S. production of major grains and oilseeds rose from an average of 9.87 billion bushels during the 1970-72 period to 15.4 billion bushels in 1982. Wheat accounted for 18.3 percent of the total, soybeans for 14.5 percent and coarse grains for 66.9 percent. Corn alone accounted for 54 percent of this 1982 total output.

In 1971-72, total U.S. corn usage was 5.2 billion bushels. Livestock feed usage was 3.98 billion, exports 800 million, and other domestic usage totalled roughly 400 million. In 1972-73, as Soviet demand entered, total usage was just under 6 billion bushels with livestock feed reaching 4.3 billion and exports totalling 1.26 billion. This was the first time that exports exceeded 1 billion bushels and feed use rose above 4 billion. In the subsequent years U.S. feed use of corn stayed close to the 1972-73 levels ranging from a low of 3.2 billion in 1974-75 and a high of 4.5 billion in 1982-83. In 1985-86 U.S. feed use is to be close to the 1972-73 level of 4.3 billion bushels.

U.S. corn exports rose steadily throughout the 1970's exceeding the 2 billion bushel level for the first time in 1978-79 and peaking at 2.4 billion bushels in 1979-80. Since then export quantities have dropped constantly and in 1985-86 are projected at only 1.6 billion bushels. Corn usage for other purposes has only increased by some 600 million bushels since the early 1970's. As a result, the total usage of U.S. corn peaked in 1979-80 at 7.6 billion bushels and in 1985-86 is expected to be 7.0 billion.

For wheat, the story has been essentially the same. Exports first exceeded the 1 billion bushel level in 1972-73 and with the exception of 1976-77 stayed above a billion bushels a year for the rest of the 1970's and into the 1980's. Exports peaked at 1.8 billion bushels in 1981-82 and have subsequently declined sharply. In 1985-86, exports will be hardpressed to remain above the 1 billion

bushel level. Domestic use for non-feed purposes has remained fairly flat over the past 25 years. Feed use has varied more widely, and reached 400 million bushels in 1984-85. This feed use is reflective of wheat surpluses forcing wheat from food markets into the feed market. As with corn, total use peaked with the wheat export market peak in 1981-82.

One of the more dramatic recent developments has been in the increased output of grain sorghum in the heavy cattle feeding regions. Throughout the 1970's output averaged 700 million bushels. In 1984 the crop totalled 865 million bushels and in 1985 production will exceed a billion bushels for the first time, reaching an estimated 1.4 billion bushels. As domestic feed demand in the United States has not risen significantly since the early 1970's, feed market conditions will be extremely competitive in the years ahead.

3. Livestock Output Trends

a) Canada

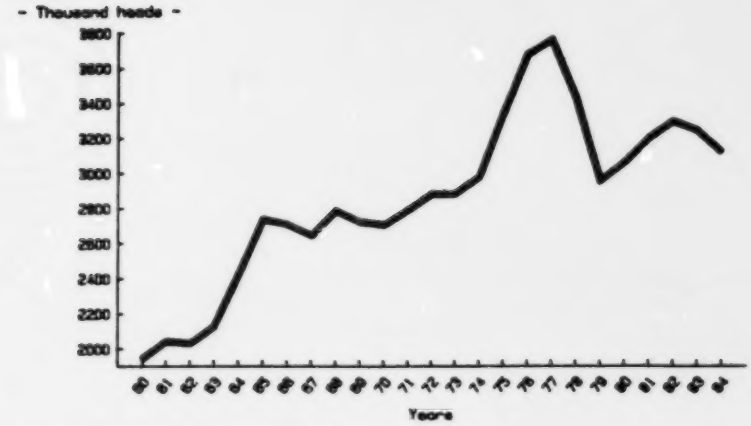
(i) Beef

Beef production in Canada has changed dramatically in the past 25 years. The production of beef, which amounted to only 846 thousand tonnes in 1971 reached a peak of 1.13 million tonnes in 1976 and then settled in the 1 million tonne range in the 1980's. Alberta and Ontario are the two most important beef producing provinces, representing almost 60 percent of Canadian production in the early 1980's. When the other two Prairie provinces are added, the four provinces combined accounted for almost 90 percent of output. Over the last 15 years Alberta's share of the domestic market has increased. From an early 1970's share of 30 percent, Alberta's share in the early 1980's had reached 35 percent, with the increased share coming from a decline in Ontario.

(ii) Pork

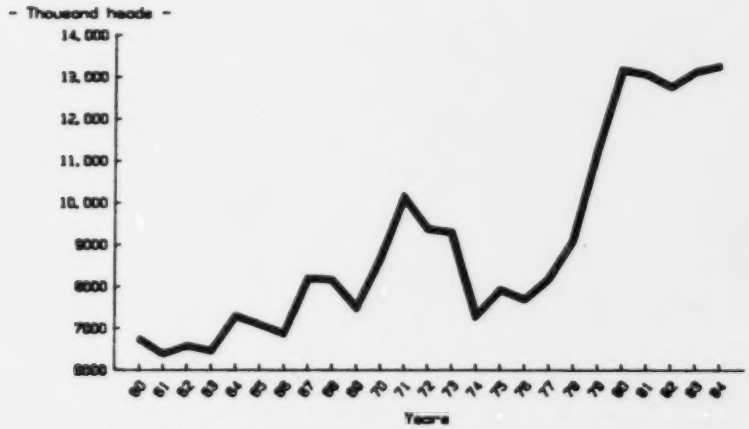
In 1983, Quebec and Ontario produced 65 percent of Canadian pork output while the Prairie market share was 29 percent. This is significantly different from market shares in the early 1970's. After peaking

CANADIAN LIVESTOCK AND POULTRY OUTPUT
1980-1984
BEEF



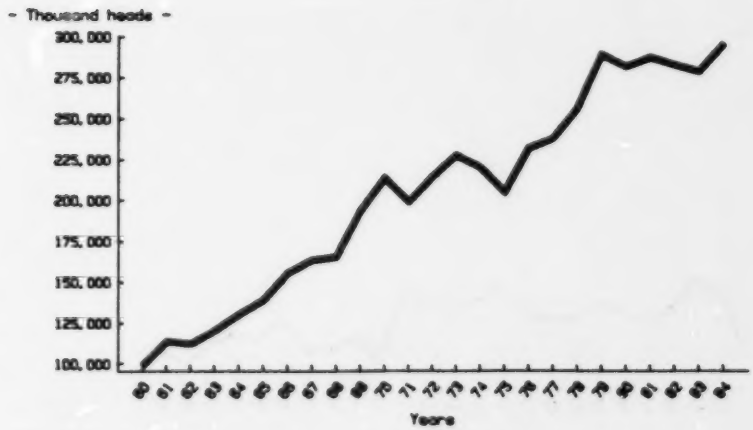
Number slaughtered in Federally Inspected Establishments in Canada

PORK



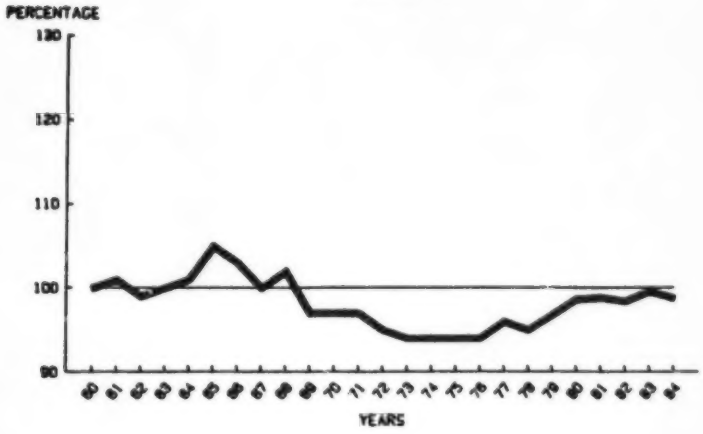
Receipts at public stockyards and shipments direct from country points to packing plants

POULTRY

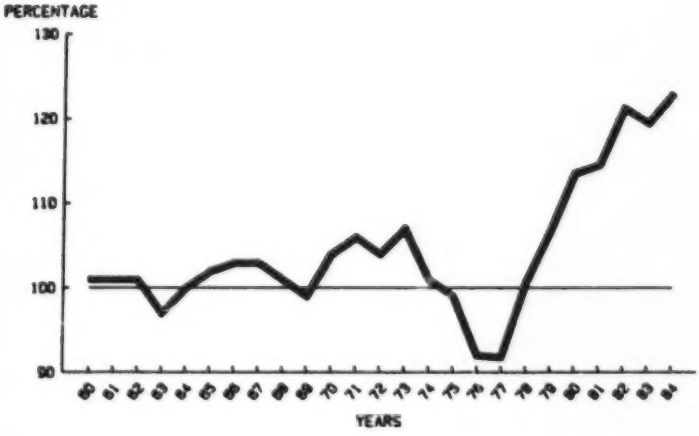


Chicken production

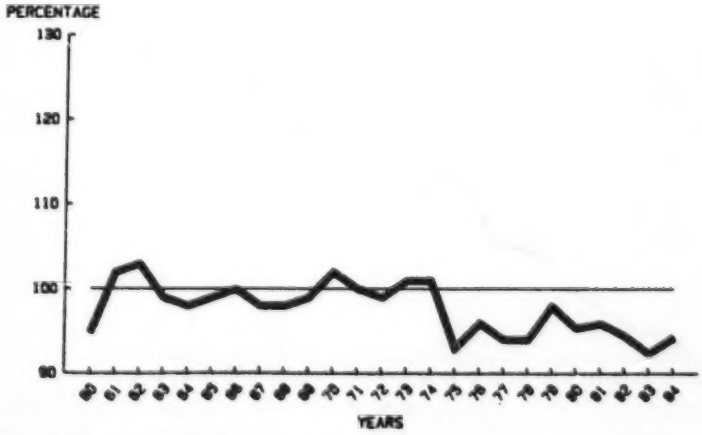
CANADIAN SELF-SUFFICIENCY
BEEF
1980-1984



PORK



POULTRY*



*Includes chicken, fowl, turkey, goose and duck.

at 10 million head in 1970, Canadian hog output dropped to nearly 7 million in 1974. Most of this decline occurred in Western Canada as very strong grain market conditions encouraged many Western producers to sell their grain directly rather than market it through hogs. In 1976 a major market expansion began, pulling total output up to a record of 13 million hogs in 1980. Most of this expansion occurred in Ontario and Quebec as producers there took advantage of the market opportunity that presented itself. This development was aided by increased corn production in Eastern Canada during this period. Since 1980 total Canadian output has been fairly constant. However, significant regional increases have occurred within both the Prairies and the Maritimes.

(iii) Poultry

Since 1960, Canadian poultry market output has consistently increased. With the exception of a few down years, Canadian chicken output has expanded almost three-fold in the last 25 years, rising from 100 million head in 1960 to approximately 300 million in 1985.

b) United States[25]

(i) Beef

In the 1950's, most beef was grass-fed, with a few cattle fed grain in farmer-owned feedlots in the North Central States. By the late 1950's, large commercial feedlots began to appear in the West and Northern Plains.

This trend continued into the 1960's. Cattle feeding, which had traditionally been performed by farmer-feeders in the Corn Belt, shifted to the Southern Plains. Aided by irrigation technology, grain sorghum production increased, causing a feed grain surplus. Consequently, a new resource base for fed beef production was created. Feedlots were organized into large commercial operations that were able to attract outside capital.

Cattle feeding was becoming more efficient with the advent of feed additives, nutrition research, and genetic improvement. By 1973, the average live weight of cattle slaughtered reached 1,043 pounds, a substantial increase from about 1,000 pounds in 1960. In 1968, when the inventory was about the same as on January 1, 1985, commercial beef production was 20.7 billion pounds, with an average dressed weight of 590 pounds. In 1984, commercial beef production was 23.4 billion pounds and the averaged dressed weight was 623 pounds. Dressed weights for steers in 1968 averaged 667, while in 1984, the average was 700 pounds.

From 1975 to 1979, the cattle industry went through the sharpest liquidation ever experienced. In 4 years, the inventory fell 22 million head to 110 million. With the sharply reduced inventory, producers reaped record cattle prices during 1979-80. Net returns were substantially improved and remained positive through the period. Consequently, herd buildup began. But this buildup halted in 1982, as prices dropped because of expanding pork and poultry production and eroding consumer buying power that came with rising inflation.

Severe cash flow problems caused by low prices and eroding land values have hindered the cow-calf sector of the cattle industry throughout the 1980's. The current cycle began with an inventory of 110 million head in 1979, but only increased to 115.4 million in 1982 before the expansion was choked by financial problems and drought-reduced forage supplies.

Since 1981, net returns (receipts less cash expenses) have fallen about $80 per cow in each of the four major cow-calf production regions. With rising fertilizer costs, net returns in the Southeast have been nonexistent since 1981. However, from 1980 to 1983, the Great Plains showed the largest decrease, which when combined with drought in 1983-84, resulted in a 7-percent decrease in the beef cow inventory in 1984. Differences in feed costs are a major factor causing variability in costs between regions.

On January 1, 1985, the inventory was 109.8 million, down 3 percent from a year earlier and the lowest inventory since 1968. Beef cows numbered 35.4 million, down 6 percent from the previous year. In addition, the 1984 calf crop, at 42.5 million, was the lowest since 1963.

(ii) Pork

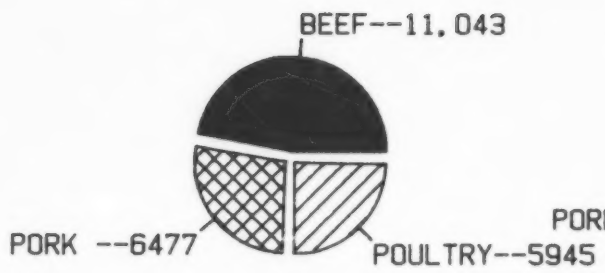
Before 1953, pork had the lion's share of U.S. meat production. Over 2 million farmers produced hogs in small enterprises, all using about the same management practices. Per capita consumption remained relatively stable, with swings largely accounted for by cyclical production. Hog cycles averaged about 4 years in length until the mid-1970's.

The sharply higher grain prices that pressured the beef and poultry industries in 1974 also reduced returns to hog producers. These low returns led to herd liquidation and sharply reduced pork production in 1975. In the following years, hog prices rose sharply while corn prices dropped, once again making hog enterprises profitable. Hog producers' returns were relatively good during 1976-78, so producers increased output, but the expansion did not occur as rapidly as in previous years. The chief reason was the lag associated with planning, financing, and building facilities. In the past, expansion was just a matter of a biological lag.

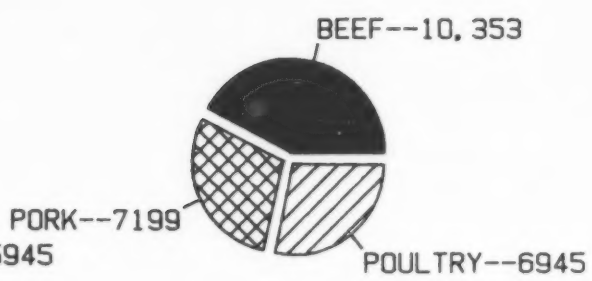
Caught in a financial squeeze, producers began liquidating the large inventory of hogs and set a commercial slaughter record in 1980. As production dropped in 1981 and 1982, hog prices rose. In the summer of 1982, hog prices averaged $62 per cwt., and in the fall, a record crop sent corn prices below $2 a bushel. As usual, hog operations started expanding. This expansion led to increased pork production in 1983.

The current herd reduction is the result of low returns and financial stress in agriculture. Although feed costs have declined sharply since 1983, hog prices have been pressured by large domestic meat production and imported pork and live hogs.

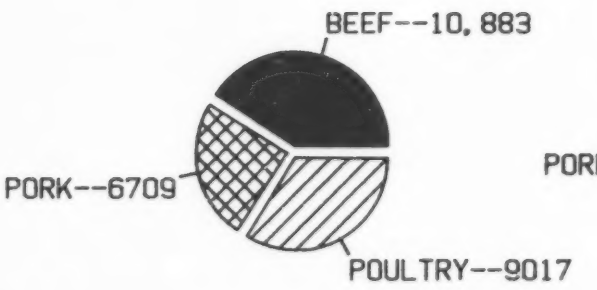
U.S. MEAT PRODUCTION
('000 metric tons)



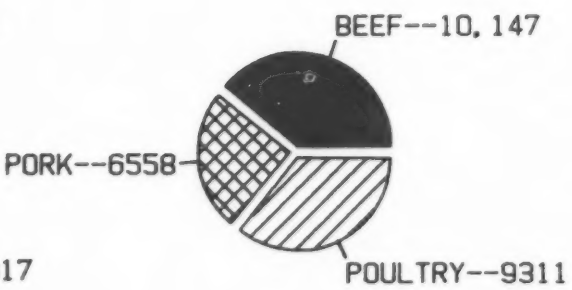
1976-80 avg.



1981



1985



1986 est.

(iii) Broilers

Before the early 1950's, broilers were produced in small flocks near cities as a secondary activity to egg production. Advances in engineering, biological studies, and changes in market organization all spurred poultry into the modern age. A major mechanical innovation was improved housing, which significantly increased production efficiency. This led to economies of size and, thus, lower costs of production. Increased feed efficiency also contributed to rising production.

After very rapid growth in the 1970's, broiler production has expanded less in the 1980's. The largest increase in output during this decade occurred in 1981 -- a 6-percent expansion. Last year was the first year in the 1980's when broiler producers made profits, after having made several cost-saving adjustments earlier in decade. For example, during the 1970's, broiler production could be easily expanded up to 4 percent by getting extra hatching eggs. Now, hatchery flocks are at full capacity, so to get extra eggs, they must delay hen slaughter.

Broiler producers are shifting from "commodity" whole birds to branded birds and parts. These products usually have higher markups and are more profitable for producers. In addition, some producers have added case-ready products, so retailers can simply take the already price-marked tray packs of chicken parts out of the box and put them in the retail case.

4. MEAT MARKET DEVELOPMENTS

(i) The Past

Although poultry market conditions have been relatively good in recent years, the red meat markets have not been profitable for producers. Since 1976 the beef market has usually been weaker than expected, and this has also been the case for hogs since 1980.

For cattle, it is generally recognized that the beef market peaked in 1976. Per capita consumption for beef in 1976 was 51.4 kilograms in Canada and 57.8 kilograms in the United States. In 1985 per capita levels will likely be under 40 kilograms in Canada and close to 46 kilograms in the United States.

For poultry the trend has been upwards virtually continuously since the 1950's, with the United States per capita consumption rising at a faster rate than Canada. The per capita consumption rate, in kilograms, has been:

	Canada	United States
1955	11.0	11.9
1960	12.6	15.4
1965	16.6	18.5
1970	20.3	22.0
1975	19.0	22.0
1980	22.7	27.4
1985	25.0 (est.)	32.2 (est.)

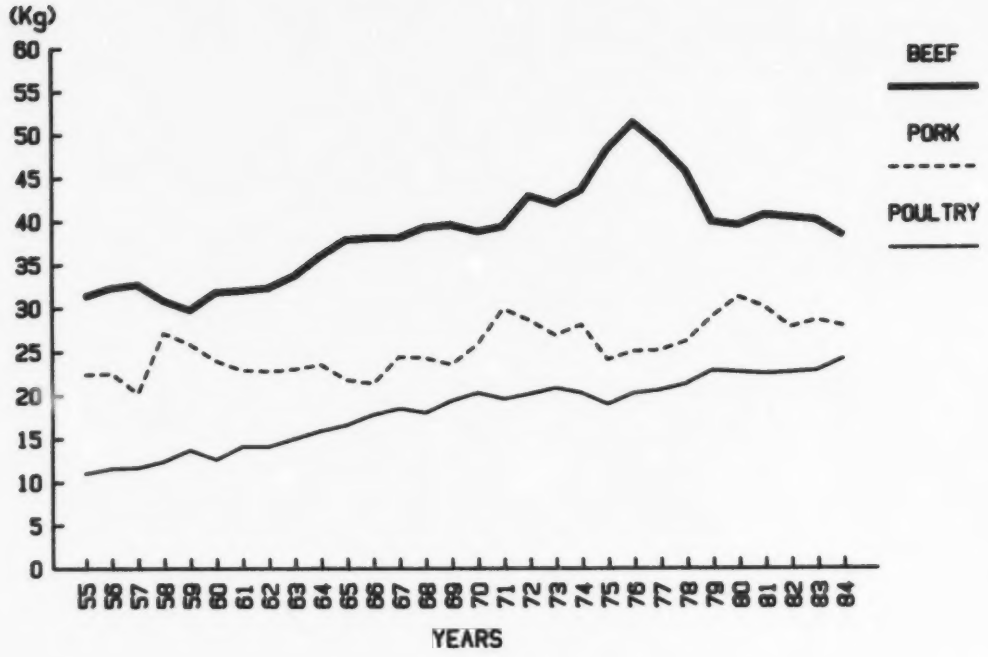
For pork, the trend has been somewhat mixed. In the United States pork consumption per capita has been sliding lower since the early 1950's, although roughly half of the decline is due to the displacement of lard from the consumer market. In Canada, consumption has been trending higher rising from 22.4 kilograms per capita in 1985 to 31.3 in 1980. Since 1980, per capita consumption in both Canada and the United States has dropped slightly.

In terms of total meat and poultry consumption, per capita consumption in both Canada and the United States peaked in 1976. After easing slightly from these levels, total per capita consumption has essentially stagnated. As a result, meat and poultry producers have seen the total domestic market demand increase only by the rate of population increase. Additional sales could be generated only through exports or through increased market share of one product at the expense of the other.

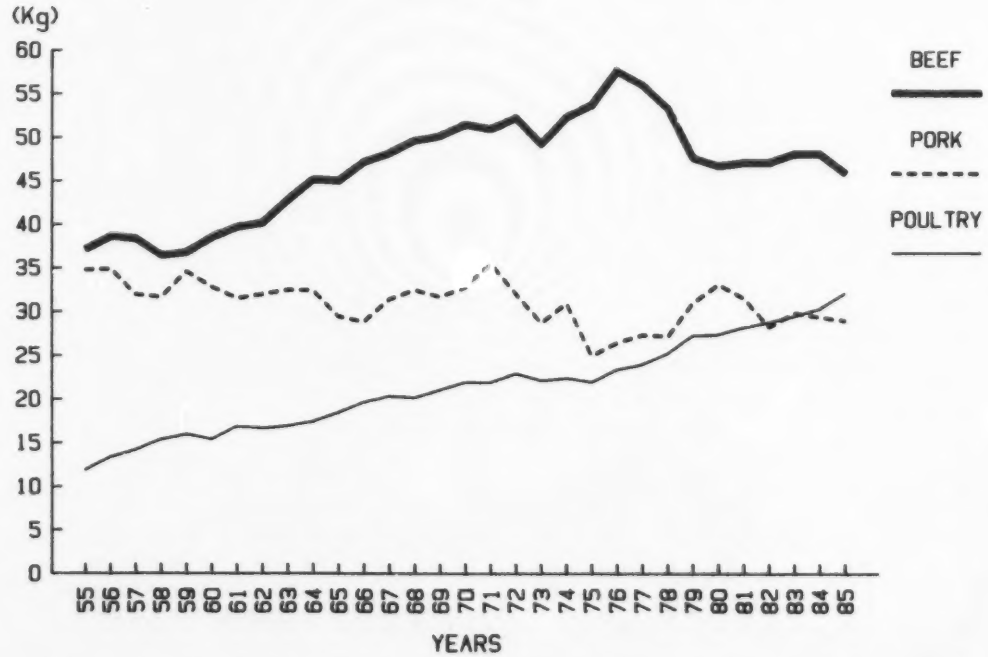
(ii) The Present

Since 1976 the major losses in market share in both Canada and the United States has been in the beef sector. Although the largest declines were experienced between 1976 and 1980, the

PER CAPITA CONSUMPTION OF RED MEATS AND POULTRY IN CANADA - 1955 to 1984



PER CAPITA CONSUMPTION OF RED MEATS AND POULTRY IN U.S.A. - 1955 to 1985



Canadian beef and pork are on a dress carcass weight basis; poultry is in eviscerated weight.

U.S. beef and pork are on a carcass weight basis; poultry is ready to cook.

beef market now appears to be facing increased market pressures. Per capita consumption in 1985 will drop below 1984 levels and further erosion in market demand is very possible in the years ahead.

For poultry, the trend of higher consumption has accelerated in the United States over the past ten years. In Canada the higher rate of consumption has only really begun in the last year. In both countries the trend is definitely upwards, with Canada appearing to have the potential for sharply higher output levels.

In the United States, on a per capita basis, total poultry consumption exceeded total pork consumption in 1982 for the first time. In 1985 it appears likely that U.S. broiler output will exceed U.S. hog output, which would be another first. For the future, the U.S. poultry industry is now targeting beef as their next goal. They have already pushed poultry ahead of pork and now they want to do the same with beef.

For Canada, from 1975 through 1983 per capita poultry consumption rose only moderately. Since then market demand has improved considerably. If Canadian consumption patterns are to realign themselves with those of the U.S. consumer, Canadian poultry output will rise sharply in the years ahead.

U.S. pork output peaked in 1980 and per capita consumption has dropped from 33.3 kilograms in 1980 to a projected 29.1 kilograms in 1985. Even with lower beef output, the U.S. hog producer appears to be having difficulty competing with the major competition -- the U.S. poultry industry. Since 1980, with an essentially stagnant total per capita demand for meat and poultry, the U.S. poultry industry has increased per capita demand for their product from 27.5 kilograms to 32.2 in 1985. The 4.2 kilogram drop in per capita consumption of pork is largely in reflection to the increased market share of U.S. poultry.

For Canada, the pork industry has stimulated increased consumer demand in recent years. A large part of this added demand has been due to the relative price changes in the Canadian meat and poultry market since 1976. As Canada has moved from an import to an export basis

for pork, Canadian pork prices have dropped from a premium to a discount to U.S. prices. Domestically this has resulted in pork prices falling relative to beef and poultry and this price realignment has stimulated consumer demand.

(iii) The Future

In a broad sense it appears likely that current North American trends will continue. Total meat and poultry consumption will probably not rise significantly on a per capita basis. As poultry will continue to attract a higher level of per capita consumption, red meat consumption will likely be pressured lower.

U.S. poultry exports rose sharply throughout the 1970's, before peaking in 1981 and 1982. Exports have dropped since then, forcing more supplies into the domestic market. As major increases in off-shore business appears unlikely, virtually all future increases in U.S. poultry output will be for the North American market.

Canadian hog exports also rose sharply from the mid-1970's until today. As off-shore pork export opportunities are not at all good, Canadian pork production will also be for the North American market. If North American pork production has peaked in 1980 and if North American per capita consumption has also peaked, then future market growth appears to be very limited.

On balance it appears that the North American beef industry could continue the decline that has been experienced since 1976. For hogs, the 1980 output peak could be a similar major market turning point as that experienced in beef in 1976. For poultry, recent trends appear likely to continue and the Canadian poultry industry especially appears poised for significant increases in market share.

5. GRAIN LIVESTOCK INTERFACES

Since the beginning of the 1970's there has been a pro-grain bias in the North American market. For many grain producers it was more attractive to market grain rather than feed it. This in turn led to a market opportunity for those producers wishing to raise livestock. For the beef market this has been most obvious in Iowa.

> Iowa's cattle-feeding industry has been steadily shrinking, while in some other states it's been growing. And there are no signs of a change.
>
> The largest cattle-producing state in the U.S. as recently as 1972, Iowa now ranks fifth behind Texas, Nebraska, Kansas and Colorado. In the last 25 years, Iowa's share of U.S. beef production has slipped from 21% to less than 10% of the total.[26]

This continues a trend which had been in effect since just after World War II.

> Following World War II, new production technologies and markets encouraged the shift of humid midwest agriculture to greater cash crop production and an increase of the cattle finishing industry to less humid areas such as Texas, Oklahoma, Colorado and Nebraska.[27]

For hogs the impact was more general. As more producers in the grain surplus regions slowed hog output, more producers in other regions subsequently increased their output levels. In Canada this resulted in a major shift of market share from West to East. In the United States the shift was out of the Corn Belt into the Southeast and Southwest. Since 1982, this U.S. trend has reversed.

> The **Feedstuffs** sources interviewed indicated that the geographic move from the Southeast and Southwest to the heart of the Corn Belt that has been taking place during the past three years will persist. In general, lower feed and transportation costs have been, and will continue to be, the reasons for this movement, they said. [28]

In Canada, Western hog output has begun to increase and output in Central Canada has been on the decline since 1980. However, the increase in hog output in Central Canada since the early 1970's has also coincided with an

increase in feed grain production in the same region. Much of this grain output increase was developed to feed the growing livestock output. This grain-livestock base will be largely maintained during any period of retrenchment. For cattle, the U.S. dispursement out of Iowa will likely be maintained, as sorghum output has expanded into many cattle feeding regions. For Canada, further beef market share could continue to drift from East to West.

The most important trend in the period ahead is that the pro-grain bias that had been in the marketplace from 1972 to 1982 is in the process of being dismantled, as the global grain glut is forcing change. By itself, such a dismantling will promote meat production. The decline in grain exports that is the reality of the 1980's means that more grain must be used domestically. Although the poultry market will be able to handle slight output increases, the red meat sector will not. The disposal of grain surpluses in the period ahead appears destined to create a meat market problem.

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Footnotes

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